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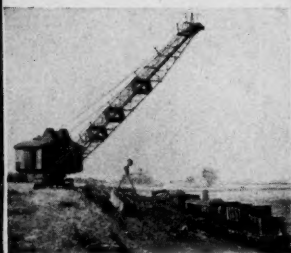
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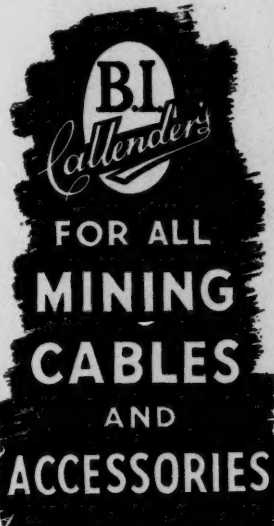
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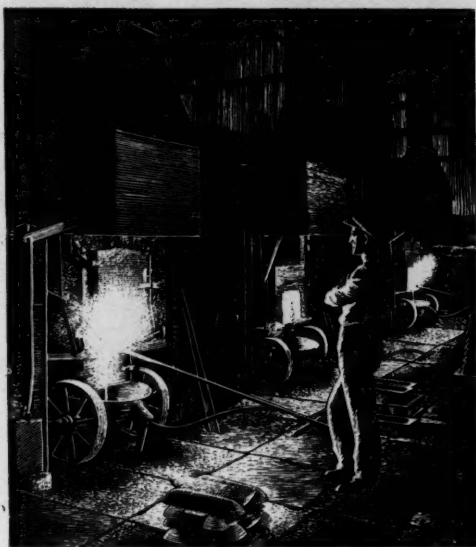
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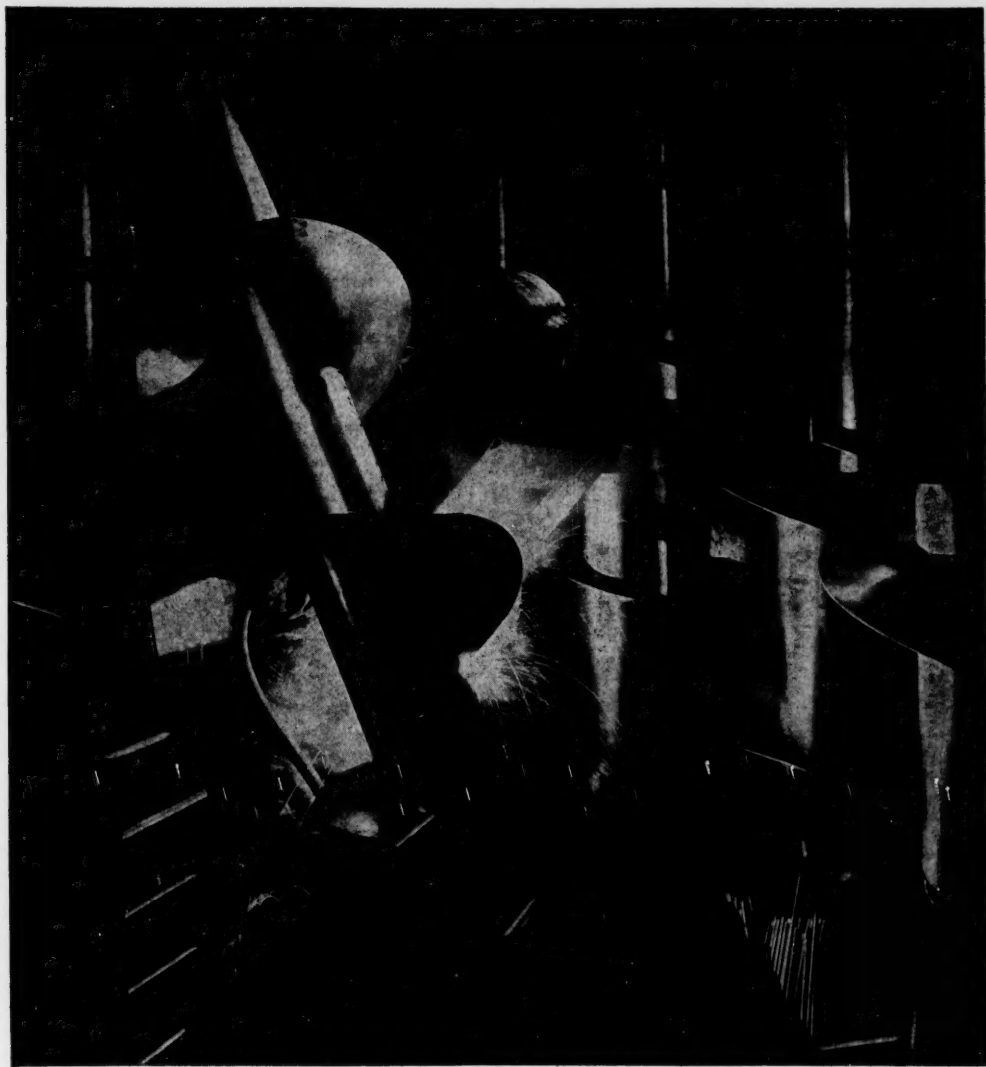


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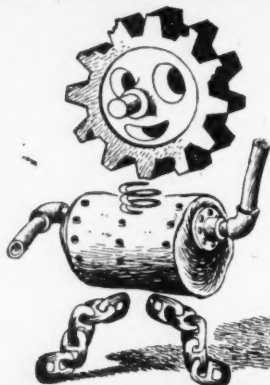
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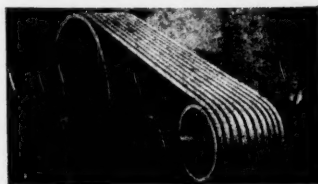
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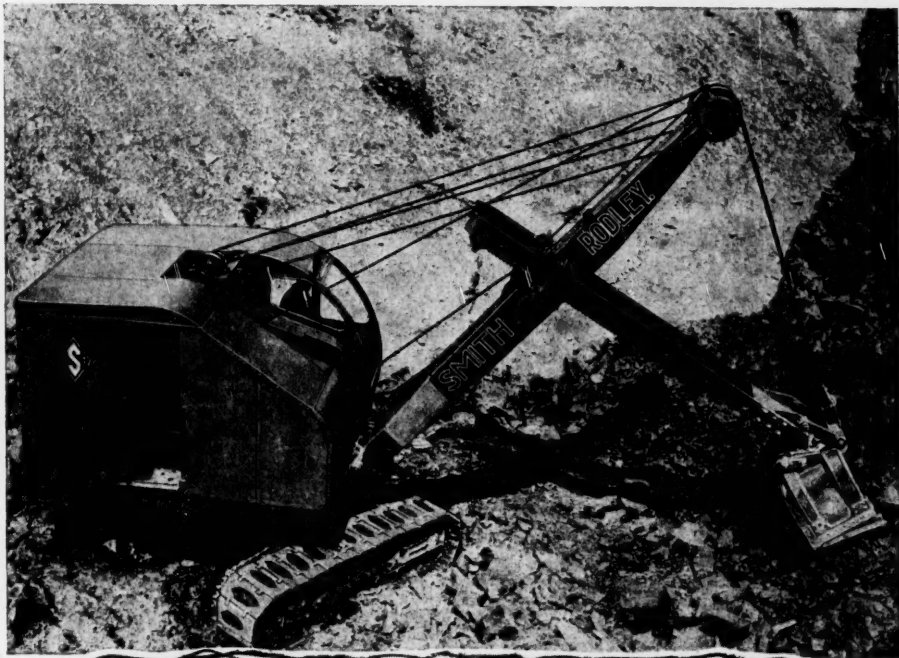
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THIS WEEK'S FEATURES

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NOTES AND COMMENTS

I.M.F. on Gold

The Annual Report of the International Monetary Fund has just been published in Washington. Its authors state, in the chapter on Gold Policy, that during the year several member countries made enquiries of the Fund regarding contemplated changes in their gold practices. On each occasion, the Fund opposed the introduction of any measures or arrangements that might help to make gold more readily available for premium markets.

In the course of the second half of last year, there was a large increase in the volume of transactions at premium prices, a noticeable decline in the amount of world output entering monetary reserves, and a marked increase in the amount of gold purporting to be for artistic, industrial and professional use. Last March, the Fund instructed its staff urgently to elaborate, after consultation with the countries concerned, more effective methods of implementing the Fund's gold policy. "This subject was still under investigation and consideration at the time of writing this Report."

The Report points out that the increase in the price of gold during the past year reflects, in the main, the increased preference for gold at a time of great political uncertainty and renewed inflationary pressures. However, in spite of the pressure of demand, prices in premium markets in recent months have not reached the level attained in the year prior to the devaluations of September, 1949. Part of the explanation for this appears to lie on the supply side of the market.

During the past year sales of gold by South Africa for industrial and artistic purposes increased markedly and a portion of this gold doubtless found its way into premium markets for hoarding purposes. In addition, France and some other countries sold gold from their monetary stocks to abate domestic inflationary pressures. These factors are part of the explanation of the markedly lower prices noted recently. It seems likely, however, that the lower prices indicate that the demand for gold since the outbreak of war in Korea has been less insistent than it was before the series of devaluations.

World gold output (excluding the U.S.S.R. and North Korea) was about \$850,000,000 in 1950 compared with \$825,000,000 in 1949 and \$740,000,000 in 1945, but it was still about a third below the 1940 peak. Current output in Asia is only a quarter, and in Australia and the U.S. about a half, of the 1940 level, but in Canada and South Africa, it is over four-fifths of the previous peak levels.

Most of the increased output in 1950 was in the United States and Canada. There was no significant change in the sterling area countries, which by the devaluations of September 1949, raised their official price of gold by 44 per cent; in South Africa and Australia, there was indeed a slight decline in output. The main reason why South Africa's output failed to respond to the rise in price seems to be the policy of the mining companies to mill inferior ore when the price-cost relation becomes more favourable, and thus to prolong the life of the mines. But to a significant extent, the effects of devaluation were also offset by an increase in operating costs, though devaluation has accelerated the development of new mining properties in the Orange Free State.

Gold output in the United States increased for the first time since 1947. This was due mainly to the boom in the production of metals which yield gold as a by-product, and to the fulfilment of investment plans in some mines that had suspended operations during the war. Canadian output has shown a consistent recovery since 1945, which continued in 1950.

The rise in the price of gold in premium markets and increased premium sales since June 1950 have brought additional revenue to the gold mining industry, particularly in South Africa, which is, however, highly variable. Thus, the extra revenue from premium sales by the South African mines amounted to roughly 70c. per oz. of gold produced during the second half of 1950, but to \$2 per oz. in the first quarter of 1951.

Valued at \$35 an oz., the total stock of gold in the possession of monetary authorities in the world (excluding the U.S.S.R. but including stabilization funds and international institutions) is estimated at \$35,830,000,000 at the end of 1950, i.e., approximately \$420,000,000 more than at the end of 1949. Thus, the equivalent of roughly one half of the gold production of 1950 was added to official reserves: the other half was absorbed by industrial or artistic uses or disappeared into private hoards. Most of the increase in official reserves during the year occurred before the Korean War—the increase in the first half of the year was approximately \$320,000,000, compared with only \$100,000,000 in the second half.

The increase in the price of gold in premium markets and the hoarding wave that followed the outbreak of hostilities in Korea thus meant that the equivalent of more than three-fourths of the current gold production went into non-monetary uses in the second half of 1950, against one fourth in the first half of the year.

Cornish Mining Industry—Now Practical Politics

The future of the Cornish tin-mining industry is now providing good grounds for political controversy.

Speaking at a Conservative rally at Pendarves, Camborne, at the beginning of September, Mr. R. A. Butler, M.P., said that the Conservatives intended to revise and alter the Town and Country Planning regulations with the object of encouraging development, thereby hoping to encourage and attract risk capital to the Cornish mines as had been successfully achieved in Australia, Canada and the United States. Giving a glimpse of the Party's attitude to the future role which the British mining industry should play in the national economy, Mr. Butler said that the Conservatives thought that the Government should carry out the proposals of the Westwood Report on non-ferrous metalliferous mining in this country. Furthermore, he said the Conservatives thought that a survey of resources was called for and that a body should be set up to advise the Government.

On the obverse side of the medal, Mr. R. R. Stokes, Lord Privy Seal and Minister of Materials, paid his expected visit to Cornwall on September 10 where he met a deputation from the Cornish Mining Development Association at Camborne to discuss Cornwall's mining potentialities. While there is no information available to the Press on just what was discussed at the meeting, it is understood that a full and frank exchange of views took place.

Certainly the time was opportune for the Association to get round a table with the Minister to discuss Cornwall's mineral potentialities, not only in the context of the present shortage of base metals needed to feed the rearmament drive but also within the framework of utilizing to the maximum the country's mineral wealth for the purpose of establishing a prosperous British non-ferrous mining industry. In fact, the Association has long held the view that with modern methods of surveying, including diamond drilling, it would be found that there were several areas in South Western England worthy of exploitation. No doubt, if the Minister posed the question of precisely what was worthy of serious investigation it is extremely likely that Mr. Stokes would be told by the deputation that he should consider exploring the possibilities of re-opening and unwatering the Wheal Hampton mine; re-opening of the Great Perran iron lode, which outcrops on the cliffs two miles north of Perranporth; developing the Scorrier mining area by driving an adit from the cliffs at Porthtown to Scorrier station; rewiring the lead mines at Shepherds on Newlyn Down and re-opening Little Lambriggan zinc mine at Perran. There would, of course be other schemes but these have been discussed many times in the County and were, it is understood, amongst those put before Mr. E. D. Linton, the American engineer who spent some time in Cornwall in March last on behalf of the O.E.E.C. inspecting areas worthy of investigation. In this connection it was stated by Mr. J. H. Trounson at the Association's last annual meeting that Mr. Linton was favourably impressed by what he had seen and heard. So much so that he was reported as having proposed that a leading American economic geologist, Dr. Max Short, should be officially sponsored for his intended visit to Cornwall.

In any event now that the Government has apparently come to the conclusion that the mineral wealth of this country in general and Cornwall in particular is a matter of practical politics and, bearing in mind that Mr. Butler's speech would lead one to believe that, given the opportunity, the Conservatives would not only go so far as to implement the Westwood Report but would also ease conditions to attract risk capital, the revival of the Cornish Mining Industry may well be in sight.

Belgian Congo Strategic Output Criticized

(From Our Own Correspondent)

Brussels, September 4

On September 2, the Brussels papers published a note issued by the American Press Service of the Marshall Plan, which calls for reply.

That note was dealing with the supply of strategic products by under-developed countries "such as the Belgian Congo." The note stated that the Committee of the Marshall Plan was uneasy on account of the danger resulting from the too narrow way under-developed countries conceived of the increase of the production of strategic products.

As figures are more convincing than the most emphatic or eloquent utterances, the official returns of mining exports from the Belgian Congo and from Ruanda-Urundi in the course of the first six months of this year furnish the best reply. They are as follows:

	Jan.-June, 1951	Jan.-June, 1950
Copper	92,565,719 kg.	82,725,194 kg.
Tin ore	7,513,285 "	7,539,363 "
Ingots	1,888,907 "	1,819,127 "
Cobaltiferous products	4,382,760 "	4,460,390 "
Gold	5,619 kil. 953 gr.	5,086 kg. 452 gr.
Zinc ore	54,438,183 kg.	28,013,121 kg.
Raw concentrates	24,821,940 "	24,552,412 "
Zinc (metal)	443 "	—
Industrial diamonds	4,912,466 ct.	4,841,580 ct.
Gem diamonds	342,209 "	283,122 "
Tungsten ores	267,759 kg.	364,198 kg.
Manganese ores	25,541,165 "	5,440,000 "
Tantalite ores	23,791 "	216,210 "
Tantaliferous slags	2,293,201 "	—
Tantalum-Niobium ores	125,465 "	—
Cadmium	13,788 "	12,202 "
Silver	487 kg. 557 gr.	334 kg. 739 gr.
Spodumene	5,200 kg.	—
Other mining products	87,580 "	77,079 kg.

Uranium is not quoted, as no figures or indeed any particulars, are allowed to appear as to uranium, by the express desire of the U.S. Government. The Union Minière du Haut Katanga, its producer, like the Belgian Government, in no way objects to giving full particulars, but the U.S.A. strongly object, and, consequently for us Belgians uranium is top secret. We do not, however, understand why the U.S. Government wants such secrecy about uranium, while in the U.S.A., astoundingly precise information is sometimes given about it, both in technical books and in the Press.

The above figures show that, with the exception of tin, tungsten and of tantalite, all our mining products were exported in larger, and sometimes much larger, quantities than in the corresponding period of last year.

If we did export less tin, this was due to the fact that last winter, diluvial rains flooded the mines and works of Géomies, our chief tin producer, for a whole month.

As to the lesser exports of tungsten ore and of tantalite ore, this is, in part, a consequence of the lower production of tin. Indeed, tin is extracted, either from cassiterite, from mixed cassiterite-tungsten ores, or from mixed cassiterite-tantalite ores. It is, however, still possible that the fall in the extraction of the above quoted ores results also from the gradual depletion of some fields. But depletion is a general experience in other countries.

Thus, it will be easily realized why in Belgian Congo mining circles the note issued by the Press Service of the Marshall Plan was not favourably received. Moreover, if the note meant that we are not sufficiently developing the Congo, the authors ignore that we have been there only a few decades and that we are carrying out enormous developments. To quote but one instance, the Union Minière du Haut Katanga is now carrying out a large-scale programme, which will cost, at least, 4,000,000,000 Belgian Congo francs.

South Africa

(From Our Own Correspondent)

September 4

There is little to report this month from the gold mining industry. With virtually all the major prospecting work for the new mines concluded, we are in the dog days waiting on reef intersections in the various shafts and the starting up of underground development. Once this is underway it should be possible to start drawing up a composite picture of what the Free State and the extensions to the Far West Rand have to offer in the way of profitable mining activities and, in particular, new mining techniques which will evolve from the problems which can be expected in a new field.

On the prospecting front, the most interesting developments have been the three high borehole values obtained on the farm La Riviera, immediately north of Harmony G.M.—911, 1,156 and 2,154 in.-dwt. It would seem, therefore, that a high-grade mine can be expected in this area, under the technical control of New Consolidated Gold Fields.

It should not be long now before some information is forthcoming of the extent of the Rainbow Reef on dip in the Van den Heever's Rust area. Past drilling has established its presence along a strike of over four miles, but so far its lateral extent is very problematical. It appears to be lenticular in formation, but it will not be possible for any progress to be made with demarcation of lease areas until further information is available. The current drilling programme on either side of the strike should be approaching the estimated horizon of this reef.

Although the gold fields are making good but hardly spectacular progress, other mining activities in South Africa are extremely buoyant and hardly a day passes without news of fresh properties being opened up.

GREAT ACTIVITY IN PROSPECTING FOR DIAMONDS AND BASE MINERALS

Until recently, many of these have been of a marginal nature, but the rearmament drive with the sharp increases in prices of every commodity have brought many deposits within the realms of payability. The majority of them are not large enough to justify exploitation on a large scale and consequently have not attracted the attention of the major houses—at any rate up to the present. Nevertheless, a considerable number of smaller companies with relatively low capitalization have been formed to work these formations.

Considerable activity is taking place on the Star Fissure in the Theunissen district of the Free State, where a number of small diamond mines are coming into existence. Previously, the main concern interested was New Monteleo, which has held ground for a number of years. At the present time some five companies are either operating or getting near that stage. The fissure consists of a Kimberlite formation some six miles in length and continuing to depth.

Exploratory work is also in progress on additional ground near Luderitz in South-West Africa, where successful mining operations have been in progress for some time now. These are alluvial deposits and appear to be related to the marine terraces of Alexander Bay. Whether they are as large, has still to be determined.

Over the past month or so, there has been considerable activity in the Upington district of the Northern Cape Province on the scheelite deposits. These occur in quartz veins which occur roughly parallel to the Orange River. Some work was done during World War II, and has continued rather sporadically since. The main reason for this has been that it was carried out by farmers, who as

soon as they had made a profit of a few hundreds of pounds stopped operations in order to avoid paying a high rate of super tax—which in this country incidentally rapidly works up to the highest rates of anywhere in the world. A number of companies are now engaged in starting up proper mining operations. The principal of these expects to produce around 30 tons of concentrates a month when it gets properly underway. In addition, a mine near Omaruru in South West Africa is also being restarted where tungsten ore is found associated with other minerals in pegmatites.

Another area where much activity is going on is at Gravelotte, adjoining Consolidated Murchison's antimony property. This area is highly although erratically mineralized. A cinnabar-bearing formation has been opened up, which occurs in chlorite-carbonate schists. Lead- and copper-bearing horizons have also been opened, and steps are being taken to exploit them in the near future.

In view of the world shortage of asbestos, intensive exploratory work is being done to find new deposits and to step up the output of existing producers. About the biggest of these new undertakings is Msauli which is on the Transvaal side from Havelock in Swaziland. The outlook is most promising, and it may well develop into one of the foremost producers. The asbestos deposits of the Northern Transvaal, around Piersburg, are also attracting the attention of a number of companies and increased milling plant is being put up at high speed.

The Rhodesias are not lagging behind, and the latest development is a joint venture in the Shabani district by African and European and New Monteleo. Here chrysotile is found in wide veins in serpentine and is mined by quarrying.

TIN MINING ACCELERATED IN TRANSSVAAL AND S.W. AFRICA

Of all the base minerals which has attracted attention as the result of soaring commodity prices is tin. Up until very recently, the only two producers were Rooiberg and Zaaipplaats operating in the Warmbaths area of the Northern Transvaal. Other deposits were known but attracted little attention. Now there are some half dozen other companies which are operating pilot plants or carrying out major prospecting operations. In general, good values have been obtained, but the extent of these formations has yet to be proved.

In the Transvaal, tin mining must be regarded as rather a speculative activity in view of the erratic nature of the formations. The principal ore bodies occur as lodes in fissures which are from a few inches to a few feet in thickness. The cassiterite occurs also in irregular and chimney-like deposits that lie in most places near a major fissure and in many cases between intersecting fissures.

Efforts are also being made to exploit the tin-bearing formations of South West Africa. In the past, little was done there owing to the isolated situations of the deposits and, in particular, the shortage of water, of which there is barely sufficient for human needs let alone for operating plant.

Work has been done, however, on the design of concentrating tables, using air instead of water with a fair measure of success. At Nabib, the Uis Tin Co. is now operating a pilot plant, and it is hoped to eventually treat 1,000 tons a day, with a tin content of about 0.3 per cent. Also in this area, the Arandis Tin Mine is being extended to treat 1,200 tons a month, with an estimated tin content of 0.9 per cent. The cassiterite in this area of South West Africa occurs in iron ores with calcite and quartz in a number of veins filling parallel fissures in crystalline limestone. It has some regularity in the distribution of the metal and is stated to lend itself to exploration and exploitation on economic lines.

Prospecting and Borehole Drilling in the O.F.S.—I

By C. BICCARD JEPPE, M.Sc.(Eng.), A.R.S.M., D.I.C., M.I.M.M.

The demand for speed in shaft-sinking and preliminary underground development in the O.F.S. has been a challenge to mining technique. This has been accentuated by the difficulties arising from unexpected occurrences of heavy water-bearing fissures at frequent intervals in the underlying strata. The various ways in which this challenge has been met are described in an article entitled: "Shaft Sinking and Development in the Orange Free State Goldfields," by Professor Biccard Jeppe, which appeared in No. 2 of *Optima*, a quarterly review published by Anglo American Corporation of South Africa, extracts from which are given below.

The Orange Free State goldfields at present consist of 13 mines, all lying within about 14 miles of the new town of Welkom, some 15 miles west of Whites, a station on the main Johannesburg-Bloemfontein railway, situated 155 miles from Johannesburg and 89 miles from Bloemfontein. The 13 mines form a practically solid block, more than 30 miles in length and up to 8½ miles wide, with an average width of about 5 miles. The total claim area of these 13 mines (see Table I) is 70,371 claims, covering more than 160 square miles.

More than 500 diamond drill holes have been put down in the Free State. On the 13 mines, 168 holes have been drilled—more than one per square mile—and well over half of them have disclosed payable values (more than 150 in.-dwt.). The gold in the Basal Reef is commonly concentrated in a very thin layer, and the tendency is for some of the gold to be lost in the diamond drill cores: assay values from these cores are, therefore, likely to be less than the real value of the reef.

On the seven Free State mines of the Anglo American Corporation Group, out of 94 boreholes, 22 holes (23.4 per cent) did not intersect the Basal Reef—either through faulting, entering igneous intrusions, caving or for other reasons.

Of the 72 holes which intersected the Basal Reef, seven (9.7 per cent) showed a grade of 1,000 in.-dwt. or more; 18 holes (25 per cent) more than 500 in.-dwt.; 27 holes (37.5 per cent) more than 375 in.-dwt.; and 46 holes (63.9 per cent) more than the probable pay limit of 150 in.-dwt. In addition, in 13 holes (18.0 per cent) the grade was between 50 and 150 in.-dwt.; and in the remaining 13 holes (18.0 per cent) the grade was below 50 in.-dwt. This is a truly remarkable example of consistently good values over a large number of holes.

HIGH AVERAGE PAYABILITY OF BOREHOLES

The average grade of the 46 holes, which include the two very high-value Free State Geduld holes, was 1,202 in.-dwt. Even without these two holes (and there is no logical reason at all why they should not be included) the average grade was 450 in.-dwt. The results obtained from the boreholes on the other six mines in the area were of a similar high order. On this evidence it can be accepted, with a considerable degree of confidence, that the Basal Reef in the new goldfields is probably of much higher grade than the average Witwatersrand mine and that payability is likely to be at least 50 per cent. Moreover, as confirmatory evidence, where the reef has so far been disclosed in shaft-sinking and in development, the sampled values have been found generally to be higher than was indicated by the adjacent boreholes.

It is probable that the average stoping width in mining will be of the order of 42 in. to 44 in. On this basis, and assuming a 50 per cent payability, there is an indicated tonnage of 600,000,000 to 700,000,000 on the 13 mines, or 40,000,000 to 50,000,000 tons per mine. This, on the basis of 100,000 tons per month per mine, represents an average life of 40 years or more.

The shaft-sinking campaign was based on evidence from the boreholes (see Table II), combined with geological evidence.

The following probabilities were very strongly indicated:

1. Large tonnages of ore are available on most of the mines above a depth of about 4,500 ft., and in some cases at much shallower depths.
2. The area is severely block-faulted—probably even to a greater extent than on the Western Reefs Exploration and Development Company, Ltd.
3. The rise in temperature with depth—the "temperature gradient"—as determined by temperatures taken in the boreholes and in the shafts, is much higher than on the Witwatersrand, though not as steep as is found in many other mining areas, e.g., Mysore (India), Butte (Montana) and the Magma Copper Mine (Arizona).

The temperature gradient varies greatly with the rock formation, being of the order of 1° F. rise per 60 to 70 ft. of depth in the Karroo System; 1° F. per 130 to 140 ft. in the Ventersdorp Lavas; and 1° F. per 200 to 220 ft. in the underlying rocks.

In the Free State, the Karroo and Ventersdorp Lavas each vary in thickness from nil to more than 2,000 ft. The probable "Virgin Rock Temperatures" (V.R.T.) on the 7 mines of the Anglo American Group are given in Table III. The temperature gradient on the rest of the field is similar.

SHAFT DESIGN

Modern practice has proved the value, for speed in sinking, of the installation of permanent equipment at the earliest possible stage in sinking operations. This was not generally possible in the new goldfields, as such equipment could be obtained only with great difficulty and after much delay. Nevertheless, at most of the shafts permanent steel headgears have been installed; and while most of the shafts have at least one permanent hoist, some are fully provided.

The mining groups concerned in this great shaft-sinking campaign naturally varied in experience and practice. Four different types of vertical shafts were chosen (see Table I). The main factors determining the choice are:

Cost of Sinking.—The very large capital required to bring the mines to production involves heavy overhead expenses. The cost of sinking is, therefore, greatly affected by the speed of sinking, and this, for similar ground conditions and depth, is dependent on the type of shaft, area excavated and hoisting equipment used.

Ventilation Requirements.—High rock temperatures at depth require the provision of ample quantities of ventilating air. Under dry conditions, with dry shafts and dry airways and general dry working conditions (e.g., at Mysore, India) mines can be worked even when the rock temperatures are as high as 140° F. Even under comparatively wet conditions, mining operations are being satisfactorily carried out where rock temperatures are very high; thus, at Butte, Montana, mining is being done with a rock temperature of 124° F. at 4,000 ft.; and at the Magma mine, in Arizona, where the rock temperature is 4,000 ft. 140° F. In both these cases the air is cooled—at Butte by water cooling pipes; and at Magma by underground refrigeration. On the Witwatersrand, regulations demand the use of water underground to minimize the

silicosis hazard. Nevertheless, by the use of surface refrigeration, with accessory underground cooling devices, mining is being carried below 9,000 ft., where rock temperatures are of the order of 108° F.

There is some diversity of opinion as to the effect on the human body of high humid conditions, but it is generally accepted that, when the wet bulb temperature of the air exceeds about 87° F. or 88° F., working efficiency diminishes; above 90° F. wet bulb temperature there is also a danger of heatstroke even with acclimatized mine workers, and working efficiency begins to drop rapidly. It is clear, therefore, that every possible effort must be made—and will be made—to keep down the wet bulb temperature below 90° F.

When water has to be used in actual mining operations, as is now the case on all the Witwatersrand mines, experience has shown that it is difficult, though not impossible, to maintain wet bulb temperatures more than 15° F. to 20° F. below V.R.T. in the airways; or 10° F. to 12° F. below V.R.T. in the stopes.

Wet bulb temperatures are kept down by maintaining shafts and airways as dry as possible; by the provision of large quantities of ventilating air; and, when temperatures above 88° F. are anticipated or met, by the use of surface

or underground refrigeration, with local refrigeration (or cooling) for "hot spots."

Other methods may be evolved, e.g., the use of protective films, to eliminate or reduce evaporation; further advances towards dry mining by the employment of dry dust-catching devices and the like: but it is quite clear that in the Free State at depths below about 5,000 ft. (V.R.T. 105.6° F. \pm 2.2° F.), special arrangements will have to be made to enable mining operations to be carried out efficiently.

Mining Requirements.—Analysis of the boreholes has shown clearly that the ground is broken up into blocks by faults with "throws" ranging from a few feet up to 1,800 ft.

At the Western Reefs Exploration and Development Co., Limited, where similar block-faulting occurs, experience has shown that the most satisfactory method yet evolved is "district mining" (i.e., the use of a single double-purpose shaft for a whole "district"). This single shaft provides both downcast air and an upcast air outlet; and this duplication, or "twinning," is continued into the development by the use of twin haulages. By this means, ventilating air can be brought to any working point in the "district," and very long crosscuts, which would be required in any other type of opening-up, are unnecessary.

TABLE I
Mine and Shaft Data

Mine	Administering Group	Claim Area	* No. of Shafts	Size of Shaft Inside Lining	† Upcast Area sq. ft.	‡ Total Excavation Area sq. ft.	§ Equival-ent Tonnage per ft. sunk	Present Degree of "Cover" in Shaft	** Approx. Distance Between Shafts ft.	Depth of Shaft March 31 1951	Depth at June 30 1951
Western Holdings Ltd.	Anglo American Corp. Ltd.	4,930	2R	46' 4" x 10' = 463.3 sq. ft.	135	611	51	Complete	7,000 (S)	(1) 3433 (2) 3298	3717 3725
Free State Geduld Mines Ltd.	do.	5,232	2R	46' 4" x 10' = 463.3 sq. ft.	135	611	51	do.	8,000 (D)	(1) 3208 (2) 3883	3518 4275
Welkom Gold Mining Co. Ltd.	do.	4,710	2R	46' 4" x 10' = 463.3 sq. ft.	135	611	51	Where water met	7,000 (S)	(1) 3010 (2) 2950	3010 2950
Pres. Steyn Gold Mining Co. Ltd.	do.	4,839	2R	46' 4" x 10' = 463.3 sq. ft.	135	611	51	Complete	9,850 (S)	(1) 3385 (2) 3035	3759 3576
Pres. Brand Gold Mining Co. Ltd.	do.	4,263	2R	46' 4" x 10' = 463.3 sq. ft.	135	611	51	do.	10,050 (S)	(1) 2221 (2) 1532	2581 1953
Lorraine Gold Mines Ltd.	do.	6,539	2R	46' 4" x 10' = 463.3 sq. ft.	135	611	51	do.	7,600 (S)	(1) 664 (2) 33	1485 43
Jeannette Gold Mines Ltd.	do.	5,163	R + ?	46' 4" x 10' = 463.3 sq. ft.	135	611	51	do.		(1) 32	201
St. Helena Gold Mines Ltd.	Union Corp. Ltd.	8,244	2 (Inc.E)	(Inc.) 18' x 8' (E) 40' 6" x 14'	(E) 31	576	48	Where water met	5,500 (S)	Inc. 2928 (E) 2938	2928 2938
Freddies Nth. Lease Area Ltd.	Johannesburg Consolidated Invest. Co. Ltd.	5,100	2R	47' x 11' = 517 sq. ft.	154	669	56	Where water met	8,000 (S)	(1) 4487 (2) 3501	5025 3939
Freddies Sth. Lease Area Ltd.	do.	5,100	2R	47' x 11' = 517 sq. ft.	154	669	56	do.	8,000 (S)	(1) 3721 (2) 4101	4248 4415
Virginia O.F.S. Gold Mining Co. Ltd.	Anglo-Transvaal Consolidated Invest. Co. Ltd.	5,355	3C	24' dia. = 452 sq. ft.	§19.6 sq. ft.	552	46	Complete	4,600 5,500 (D)	(1) 2194 (2) 2254 (3) 550	2621 2460 1557
Merriespruit (O.F.S.) Gold Min. Co. Ltd.	do.	5,380	2C	24' dia. = 452 sq. ft.	§19.6 sq. ft.	552	46	do.	6,000 (D)	(1) 1083 (2) 97	1473 97
Harmony Gold Mining Co. Ltd.	Central Mining and Investment Corp. Ltd.	5,523	2C	24' dia. = 452 sq. ft.	(3) 14.0	552	46	do.	4,300 (D)	(3) 1018 (V) 1161	1375 1840
TOTAL		70,371	26								

*R. — Rectangular, 7 compartment
Inc. — Incline Shaft.
E. — Elliptical Shaft.
C. — Circular Shaft.
V. — Ventilation Shaft.

**S — Line of Shafts on Strike.
D — Line of Shafts on Strike.
§If 4, 30" Vent. pipe.
‡ \pm 5%.
† Ventilation Shafts not included.

Strength of shaft, capacity for hoisting rock, men and material, and depth of shaft are among other factors that are adequately met by any of the types of shafts being sunk.

The problem resolved itself initially into the consideration mainly of the relative importance of the first three factors, namely, cost and speed of sinking; ventilation requirements; and mining requirements (*i.e.*, flexibility in dealing with faulted block areas). When sinking started, however, a further and most vitally important but quite unexpected factor became apparent—the existence, especially just below the Ventersdorp Lavas, of fissures and fissured ground carrying large quantities of water. These water-bearing fissures, unexpected geologically and not indicated in any way in the boreholes, have caused serious delays in shaft-sinking and in subsequent development operations.

The quantities of water encountered are not as great as, for instance, those intersected in many mines developed under dolomite. They can readily be handled by pumps. But the position is complicated seriously by the fact that the rock temperatures at depth in the Free State are much higher than on the Witwatersrand mines, and the implication that, unless the shafts and airways are made and maintained reasonably dry, efficient mining will be very difficult.

All the types of shaft layouts in the new goldfields have sufficient elasticity to meet almost any conditions that may arise, but some are better adapted to deal with one factor and others with another factor.

Speed (and so cost) of sinking is naturally of great importance. Sinking two shafts at, say, £75 per ft. instead of, say, £150 per ft., means a saving of £750,000 for a depth of 5,000 ft.—a very large, but not absolutely vital, factor where a total expenditure of about £8,000,000 is, in any case, involved. The sinking time-factor is probably of more importance; but, under similar difficult conditions, where large water fissures are encountered and must be sealed off by cementation, the variation in the capacity of different types of shaft to deal with such conditions is great—but not overwhelmingly so.

It will be generally accepted, I think, that by far the most important single factor, especially where depths of more than about 5,000 ft. are involved, is the capacity of the layout to pass large quantities of air. Of almost equal importance, though this may be controversial, is the capacity of the layout for "district mining." Both these factors remain of vital importance throughout the life of the mine.

Circular single-purpose shafts (*i.e.*, either downcast or upcast) are the best type for passing large quantities of air. They can be sunk, in general, more rapidly and cheaply than other types of shafts—at least down to a depth of 4,000 to 4,500 ft. (They can be carried to greater depths when permanently equipped.) They are well suited to deal with difficult conditions, such as heavy water-bearing fissures and fissured ground; and they can be readily adapted to the preliminary development of "districts" in block-faulted areas by the use of a large upcast ventilation pipe (or pipes) in one compartment. For large-scale

TABLE II
Borehole Data

Mine	Minimum Depth Payable B.R.	Maximum Depth Payable B.R.	Minimum Depth Other Reef (Payable)	Main Range Depth B.R.	Indicated Approx. Dip of Reef	Estimated Depth of Reef in Shaft	Proposed Initial Depth of Shafts
Western Holdings Ltd.	2572	4502		2500-4300	25° E.	(1) 4158 (2) 4254	(1) 4610 (2) 4560
Free State Geduld Mines Ltd.	3922	8725		3900-5500	25° E.	(1) 5446 (2) 4785	(1) 5590 (2) 5610
Welkom Gold Mining Co. Ltd.	1785	*NP 5080 3353		1800-3400	27° E.	(1) 2777 (2) 2902	(1) 3010 (2) 2950
President Steyn Gold Mining Co. Ltd. ...	2701	7306		3000-5500	25° E.	(1) 4160 (2) 4900	(1) 4500 (2) 5200
President Brand Gold Mining Co. Ltd. ...	4122	6079		4400-6100	25° E.	(1) 4450 (2) 6079	(1) 5200 (2) 5500
Lorraine Gold Mines Ltd.	3790	7129		3500-5700	20° W.	(1) 5000 (2) 5000	(1) 5200 (2) 5200
Jeannette Gold Mines Ltd.	*NP 3409 4955	6033	3493 (A)	4100-6100	20° W.	(1) 6033	(1) 6200
St. Helena Gold Mines Ltd.	1143	*NP 4433 2566		750-2600	27° E.	Incl. (4) 2000	Incl. 2928 (4) 2938
Freddies North Lease Area Ltd.	4991	5400	4470 (A)	4900-5400	10° E.	(1) 5700 (2) 5100	(1) 6000 (2) 5400
Freddies South Lease Area Ltd.	4898	*NP 7042 5949	4253 (A)	4800-6000	10° E.	(1) 4900 (2) 5500	(1) 5200 (2) 5800
Virginia O.F.S. Gold Mining Co. Ltd. ...	*1408 †1874	†3780	†L/BR	1800-3800	10° W.	(1) 4378 (2) 3400 (3) 1500	(1) 4600 (2) 3610 (3) 1550
Merriespruit (O.F.S.) Gold Mining Co. Ltd.	†1483	†7975	†L/BR	2200-4300	10° W.	(1) 4130 (2) 3100	(1) 4400 (2) 3310
Harmony Gold Mining Co. Ltd.	4223	6232		4200-5700	10° W.	(3) 4820 (V) 4180	(3) 5060 (V) 4350

*NP — Nearly payable.

A — "A" Reef.

L/BR — Leader-Basal Reefs.

BR — Basal Reef.

†Note.—The L/BR and BR. join together in the east part of the southern area.

E. — East.

W. — West.

V. — Ventilation Shaft.

"district" mining, a circular shaft can be turned into a double-purpose shaft (including both downcast and upcast areas) by putting in a partition wall; but such a partition wall is much longer than in the case of rectangular shafts and must appreciably interfere with hoisting capacity. The use of single-purpose or limited double-purpose circular shafts implies the necessity for additional single-purpose upcast shafts.

Rectangular shafts, of the double-purpose type, such as are being sunk by the Anglo American Corporation and Johannesburg Consolidated Investment Groups, are particularly well-suited for "district" mining; but, in general, they are more difficult to sink through fissured ground. Sinking is, in general, slower and so more expensive than in the case of circular shafts. The rectangular shafts of the Johannesburg Consolidated Investment Group are fully lined and can be adapted either for double-purpose or single-purpose use, as large quantities of air can be passed through them efficiently if they are used in conjunction with a single-purpose ventilation shaft.

The rectangular shafts of the Anglo American Corporation Group mines (hereinafter referred to as the Group mines) are fully lined only through the Karroo System (and, when necessary, elsewhere) and are designed, mainly for double-purpose "district" mining service, without the necessity for accompanying single-purpose upcast shafts. The area of the upcast portion of the shaft, about 135 sq. ft., will permit of a capacity of about 360,000 cu. ft. of air per minute, against a watergauge of about 11 in.—two fans, each passing 180,000 cu. ft. of air per minute, being installed in parallel. This quantity of air would appear to be sufficient for mining on a "district" basis an area of a radius of 4,000 to 5,000 ft. to a depth of the order of 5,000 ft., or perhaps 5,500 ft. (see Table I). Elliptical shafts

are intermediate, in their usefulness for the above factors, between circular and rectangular shafts.

TABLE III

Rise of Temperature with Depth in the Anglo American Mines of The Orange Free State

Depth in feet	Virgin Rock Temperature °F.
2,000	86.2 ± 2.0
2,500	89.9 ± 2.0
3,000	92.8 ± 2.0
3,500	96.0 ± 2.0
4,000	99.2 ± 2.0
4,500	102.2 ± 2.2
5,000	105.6 ± 2.2
5,500	108.9 ± 2.2
6,000	112.2 ± 2.3
7,000	118.6 ± 2.3
8,000	125.0 ± 2.4

The difficulty that will almost certainly be encountered in maintaining dry or comparatively dry shafts and airways—such an important factor in keeping down wet bulb temperatures—has led, I understand, to the consideration by the Group of the advisability of sinking, close to each other, twin circular shafts—one downcast, of 24 ft. dia., and the other, upcast, of 16 ft. or 18 ft. dia.—to serve as a unit. This unit would take the place of a double-purpose rectangular shaft. The extra cost of the upcast shaft would be largely countered by the more rapid sinking; and much larger quantities of ventilating air could be used. Such a twin-circular unit would be continued in the "district" mining operations by the use of twin haulages (as is done at present in the Group, with the double-purpose rectangular shafts).

(To be concluded)

Britain's Stake in Canadian Oil*

Canada is rapidly moving in the direction of building her prosperity, like that of her powerful neighbour, to a large extent upon the presence within her frontiers of large oil resources. Already the world's third largest consumer of oil, being surpassed only by the U.S.A. and the U.S.S.R., the Dominion has quickly established herself as an important oil producer with prospects of much higher production in future. Consumption is not far short of 400,000 barrels daily—nearly double the figure for 1947—and the average *per capita* consumption at about 350 imperial gallons a year is second only to that in the U.S.A. Production has now reached a rate of over 170,000 barrels a day, or over 8,000,000 tons a year, having increased eightfold during the past four years.

MINOR ROLE OF U.K. CAPITAL

But these developments, while occurring in a leading country of the British Commonwealth—which has such sparse oil resources within its territories yet such large U.K. oil interests in foreign countries—provide the apparent anomaly of being undertaken without the predominant participation of U.K. capital. The anomaly is the more pointed by the possibility that Britain may lose permanently all or a large part of her stake in Persian oil. She is in danger of losing the opportunity of sharing to her rightful extent in the development of new Commonwealth oil resources of major importance, and also of securing oil production that would become a valuable future dollar earner.

Hitherto, the development of Canadian oil has been primarily a field for U.S. capital and U.S. oil companies. Several hundred million dollars of U.S. capital have recently been invested, and a considerable proportion must now be on the way to receiving a financial return com-

mensurate with the high risks originally undertaken. Belgian capital has acquired a footing in Canada's oil industry through Petrofina's small production in Alberta, and the introduction of French capital into Canadian oil is being considered. The most important channel by which British capital has so far directly participated has been through Shell Oil Co. of Canada, which is jointly owned by two U.S. registered companies: Shell Oil Co. Inc. (through which Royal Dutch-Shell have an interest in U.S. oil production, refining and distribution) and Shell Caribbean Petroleum Co., a 100 per cent Royal Dutch-Shell company, registered in U.S.A. but with overseas producing interests.

Shell Oil of Canada now holds over 7,000,000 acres under exploration lease in the Western provinces. In fact, Shell was already exploring in Canada in 1939 and was one of the first to lead a revival of interest in Canadian oil in the late '30's and early '40's. Its programme, mainly concerned with areas in the foothills of the Rocky mountains, was suspended temporarily, but operations were resumed later when prospects in the plains became enhanced following the Leduc discovery by Imperial Oil (Jersey Standard) in 1947. A more direct but smaller U.K. interest in Canadian oil is that recently acquired by Trinidad Leaseholds in a Canadian company with interests in the Leduc field. Trinidad Leaseholds also has refining and small marketing interests in Canada.

Britain's share in Canadian oil is perhaps more diverse and extensive than is frequently realized, since it includes the large potential mineral rights of the Hudson's Bay Company and the Canadian Pacific Railway. The

*Extracts from the September issue of the *Petroleum Press Service*.

Hudson's Bay Company possesses mineral rights over 4,300,000 acres of land in the Prairie Provinces, part of its interests being administered under agreement by Imperial Oil. It also has a one-sixth interest (Continental Oil Co. of Delaware holding the remainder) in Hudson's Bay Oil and Gas Co., which holds leases over more than 8,000,000 acres in the Western Provinces and produced some 500,000 barrels of crude oil in 1949.

The Canadian Pacific Railway derived \$1.9 million from petroleum rents, royalties and reservation fees in 1950. At the end of the year, 42,743 acres over which it holds rights were under lease to oil companies and 11,285,742 acres were under reservation for exploration. Nearly half this company's ordinary capital, however, is held in the U.S.A., U.K. and other British holdings outside Canada amounting to less than one-third of the total. Somewhat similar oil interests to those of Hudson's Bay and C.P.R. are held on a smaller scale by companies such as the Calgary and Edmonton Corporation, in which U.K. capital is invested. These holdings, taken as a whole, are of undoubted potential value, but they are small in relation to the aggregate funds invested in Canadian oil and are no substitute for direct participation in the finance of finding and producing oil.

MR. TANNER'S UNSUCCESSFUL VISIT

Many millions of dollars had already been sunk in Canadian oil when Mr. N. E. Tanner, then as now the Alberta Minister of Mines, visited the U.K. in 1939 to induce British interests to invest in Alberta's oil industry. The first important discovery, Turner Valley, had been made, but known reserves were inadequate to justify the outlay on pipelines to distant markets. Also, long-distance pipeline operation was still a novelty, and brought a speculative element additional to that inherent in oil operations in remote areas. There was as yet no evidence to justify any firm belief in the existence of the vast oil resources now known to exist in the Western provinces. At that time, too, knowledge of the new vast oil resources of the Middle East, near to the seaboard, was being gained, and the oil industry was still sharply conscious of the surplus oil, especially in the U.S.A., that was then only with difficulty held back from the world's markets. To this may be added the doubts entertained by the existence then, as now, of a Social Credit Government in Alberta whose unorthodox views on finance at that time prejudiced financial quarters in the City against long-term commitments in Alberta. Also, as far as London financial circles were concerned, oil propositions were unfamiliar ground to all but a very small circle. Altogether Mr. Tanner's efforts were unsuccessful.

With the outbreak of the second world war so soon after Mr. Tanner's visit, however, it is questionable whether the U.K. exchange authorities would have found dollars in any worthwhile amount for investment in Canadian oil.

It should be borne in mind, however, that in other respects also, U.K. investment in Canada has not kept pace with developments in that Dominion. Britain's total investment in Canada was declining long before the second world war, falling from \$C.2,766 million in 1930 to \$C.2,476 million in 1939. Owing to the liquidation of U.K. dollar investments of all kinds during and since the war, the total was only \$1,694 million at the end of 1949, the latest year for which figures are available.

Meanwhile, the Dominion has itself generated a good deal of its own capital needs, but has of necessity looked increasingly to the U.S.A. for funds, U.S. investments in Canada having increased between 1930 and 1949 from \$4,659 million to \$5,932 million, and having been further enlarged since then.

The need to conserve both Canadian and U.S. dollars, which arose with the outbreak of war, has persisted ever

since in varying degrees. Although Leduc, Redwater and other great discoveries have demonstrated the vastness of the Dominion's oil resources, the dollar shortage has remained an obstacle to any large westward flow of oil capital from Britain. The British Treasury has up to the present restricted releases of dollars to those required to pay for high-priority imports; and large releases for investment in any Canadian industry would certainly have appeared illogical at a time when the U.K. was heavily indebted to Canada on loans granted essentially to strengthen the position of sterling.

The terms of one of these loans—the \$700,000,000-interest-free loan of 1942—also closed one channel, although a relatively small one, from which investment in Canadian industries, including oil, might have been made. The loan agreement provided that all dollars accruing from the realization or redemption of Canadian securities held by U.K. residents should be used for repayment of the credit. In 1948, however, this provision was modified, such proceeds being made available for new direct investment in Canada, and only the residue not so used being applied to loan redemption. This concession has now been continued until the end of 1953 by last month's renewal of the loan agreement.

During 1947, repayments of the loan from security realizations in Canada totalled over \$100,000,000, but in the following three years they averaged only \$33,000,000. U.K. realizations of Canadian securities were probably smaller in these years than in 1947, but they must have reached an average of much more than \$33,000,000 a year. The excess over that figure would represent the amount which, under the revised agreement, was used for direct U.K. investment in Canada. From this it appears that considerable sums were being used by British industrial enterprises to extend their Canadian interests. Until recently, however, no appreciable part of the sums so used has been applied to oil development.

Reasons for the heavy stake of the U.S.A. in Canadian oil development are not far to seek. Geographical proximity and a close affinity of economic outlook, as well as the fact that their main oil territory shows every sign of lying in a single sedimentary area, have facilitated and encouraged interest by U.S. oil companies.

Oil developments in Alberta since the Leduc discovery have proceeded so fast and so far that the opportunities for sound and profitable investment of new funds must now have diminished to some extent. But the time has not passed when such investment is possible. The rapidity of the expansion has created conditions under which many local independent concerns in Alberta have more actual and potential production than they can conveniently handle and develop without further capital and access to marketing outlets. They are therefore prepared to consider partnership or joint working arrangements with U.K. concerns.

CHANGED ATTITUDE OF TREASURY

It is therefore satisfactory that the Chancellor of the Exchequer has recently stated that he will provide dollars for investment in Alberta oil "if a sufficiently good case exists." This may be taken to mean that, subject to changes in the dollar position, exchange would be made available for sound schemes for increasing Britain's stake in Canadian oil developments. Exchange releases for three schemes of this kind have, in fact, been made since the beginning of the current year, although the total involved is believed to be moderate, amounting probably to something less than \$5,000,000. There is now every reason for believing that applications for exchange for any further promising schemes, even on a more ambitious scale, would receive careful and sympathetic consideration by the U.K. Treasury.

Technical Briefs

New U.S. Copper-Steel Wire

A new type of electroplated copper-on-steel wire named Copperon, and said to be suitable for a wide range of industrial, electrical and communications applications, has been announced by the Kenmore Metals Corp. of Jersey City, New Jersey. The new wire is produced by a patented continuous electroplating process which results in a uniform bond of pure copper to a steel core, with a coating that is resistant to changes in temperature, pounding, hot-rolling or cold-drawing.

Coal Dust Control in U.S. Continuous Mining

A satisfactory method for dealing with coal dust in working with continuous miners has been developed by the Kaiser Steel Corporation, which is using the method in some of its coal mines in Utah.

In this new method, commercially available spray nozzles were installed on the cutting and conveyor heads of the machines and a mixture of water and a wetting agent was sprayed on the coal. Pumps supply the necessary pressure. The development is stated to be so successful that recommendations of the Federal Mine Safety Code for Bituminous and Lignite Mines are fulfilled by this method. During operations, miners stopped wearing respirators and dust counts showed a reduction to within recommended, or safe, limits.

This method is described fully in U.S. Bureau of Mines Information Circular 7608, entitled, "Allaying Coal Dust During Operation of Continuous Mining Machines in Utah."

Transporting Coal by Pipeline

Transporting coal with water in pipelines has been a subject of absorbing interest for the industry and coal technologists for over half a century. However, the project has remained more in the realms of theory than in practice because of technical "bugs" which have prevented its adoption on a large scale, though several enterprising concerns have built and operated short lines for transporting certain types of coal. In fact, the first American patents covering a method of pumping coal with water through pipelines were granted as long ago as 1895, and the subject has been one of recurring interest since that time. Earlier this month the U.S. Bureau of Mines released an abstract of a publication on this subject entitled "Survey on the Hydraulic Transportation of Coal," by R. W. Dougherty, who is the industrial engineer at the synthetic fuel demonstration plant at Louisiana, Missouri. Mr. Dougherty's report includes a brief historical account of the hydraulic transportation of coal, a review of published literature on the subject, a resumé of industry opinion, economic studies and the cost estimates on 100-mile pipelines of varying capacities.

The author estimates that about \$10,000,000 would build a pipeline 100 miles long, capable of transporting 5,000 tons of coal a day with water, the estimated cost of moving the coal over the 100 mile journey being between \$1.28 and \$1.91 a ton. Similar construction and operation cost estimates are also given for the same length pipeline moving tonnages of coal ranging up to 36,000 tons a day. In this case, although the initial capital outlay for the larger capacity pipelines would rise, the cost per ton of moving coal in the 36,000 ton-a-day pipeline would fall to somewhere between 38-95¢.

Of particular interest in connection with the above is the recent announcement that a large U.S. coal company intends to build a full-scale demonstration pipeline in Ohio, through which finely ground coal will be mixed with water and pumped. This proposed line is to be a 12 in. pipe, 17,000 ft. long.

Controlling Fires in Inactive U.S. Coal Deposits

At a cost of less than one cent a ton, more than 120,000,000 tons of bituminous and anthracite coal have been saved from fire and destruction as the result of a U.S. Bureau of Mines programme of controlling fires in inactive coal deposits throughout the United States during the past three years. Secretary of the Interior, Oscar L. Chapman, announced recently. At current market prices, it is estimated that this coal would be worth over \$500,000,000 when mined. Since Congress authorized the fire control work in the 1949 fiscal year, 21 projects—most of them now marked "completed" on the records—have been undertaken by the Bureau of Mines. The total cost in Federal funds has been \$1,108,000, i.e., under one penny a ton for the coal saved. In addition, health hazards from noxious gases released by these fires have been eliminated, and many millions of dollars worth of private and public property have been saved from possible damage or destruction.

In widely scattered areas of the country, some of the fires in inactive coal deposits had been burning for a generation or more, consuming valuable coal and threatening building and lands and menacing the health of nearby residents. Bureau of Mines engineers knew where these fires were burning, and had surveyed many of them and had made recommendations for extinguishing or controlling them.

In accordance with the Congressional Act authorizing the work, fires on public domain were put out or controlled entirely at the expense of the Federal Government, which provided two-thirds of the funds for controlling fires on private, State and county lands, with the land-owners supplying one-third of the cost. Although the Bureau of Mines selects the fire projects after careful and detailed surveys, the actual work is performed by earth-moving contractors on the basis of low bids submitted to the Bureau.

Early this year the Bureau submitted a report to a Congressional committee summarizing the fire control work over the past three years. At that time, 17 projects had been completed or were nearing completion, and since then, four more have been started. The Bureau plans to continue the work throughout the current fiscal year by tackling more of these destructive coal fires. Of the 17 original projects, 15 are marked completed while work on two others is continuing. Work also is continuing on the four new projects initiated since the report to Congress.

Three methods are employed to extinguish or control the fires, with the method used at a given fire depending upon local conditions. The first, known as surface sealing, involves spreading a blanket of earth about 10 ft. thick over the burning area by means of bulldozers and other earth-moving equipment to exclude oxygen from the fire. The second method is to isolate the fire by digging a trench entirely around the fire area and back-filling this trench with clay. Both of these methods obviously are used when the fire is near the surface or where the coal bed outcrops to the surface. A third method, usually employed in controlling a fire in abandoned underground workings, is known as the flushing method, whereby silt is introduced into the burning workings through boreholes. In all three control methods, it is necessary to define the fire area by surveys, drilling test boreholes, and other means.

Although the 21 fires in active coal deposits which have been or are being controlled by the Bureau of Mines include some of the worst ones known to exist, Bureau officials have investigated more than 80 uncontrolled fires of this type in different parts of the country.

Metals, Minerals and Alloys

Copper.—With the putting into force of the machinery of the Taft-Hartley Act, the United States copper industry has been given a respite of 80 days, and the I.U.M.M.S.W. issued instructions to their members to return to work on Thursday of last week. The resumption of work is inevitably rather spotty, especially in the case of Phelps Dodge, the A.S. and R., and Anaconda, who had not reached agreement with their employees previous to the injunction issue. The brass fabricating strikers were expected to be back on Monday last. Ignoring what may happen at the end of the 80 day "cooling off" period, a very gloomy view is taken of the effects on supply already produced; the N.P.A. administrator, Mr. Fleischman, is reported as saying "we are entering a very serious time in the last part of this year and in the first of next," adding that the copper strike and the slump in imports had created a "terribly acute" supply situation, and that deficits could not be substantially overcome earlier than 1953. Copper for consumer goods is to be further reduced to 54 per cent of the base figure. It is unlikely that the men returning to work under *force majeure* will make any strenuous efforts to increase output.

Agreements for world allocation of copper were expected to be completed in Washington last week but so far the U.S. Government has not ascertained whether producers are in favour of the scheme and their general attitude appears to be one of opposition, in particular the question of price is likely to be a serious obstacle, and sooner or later the cost of the new agreement pioneered by Kennecott which may well form the framework of a general settlement later, must be reflected in corresponding price advances for the metal. It is no doubt in expectation of a rise that price-bound producers refuse to sell, and so the entire allocation programme is choked. A further 15,000 tons release from stockpile is being called for.

Somewhat unexpectedly the Ministry of Materials reduced U.K. price on Thursday by £7 per ton to £227. This is still £7 above the basic parity for the world export price of electrolytic in New York, the extra being for transport and other charges and the allowance necessary to break even as a buyer and seller of the metal. There have been frequent complaints in the United States of the premium prices paid by the British control and with the shortage of supply there accentuated by the recent strike, the price spread has probably figured in some of the recent high-level discussions in Washington. The United States domestic price continues unchanged at 24½c.

The Australian electro price has been raised to £A285 a ton ex-port Kembla Smelter.

The British Bureau of Non-Ferrous Statistics report U.K. copper supplies at the end of July at 120,336 tons against 116,907 tons a month earlier. Consumption of copper in all forms in July was 23,759 tons, and the seven months total 326,219 tons (295,739 a year ago).

Lead.—The strike of the I.U.M.M.S.W. is estimated to have reduced the supplies of lead by 60 per cent, and the 25,000 tons which the N.P.A. has asked the Munitions Board to release is not immediately available. There is a scramble for Mexican lead for which up to 22c. per lb. has been paid.

U.K. supplies at the end of July are reported as 27,959 tons compared with 25,959 tons a month earlier. Consumption in July was 26,126 tons and for the current seven months 206,778 tons.

Tin.—As anticipated last week an agreement between the R.F.C. and Bolivia for 30-day contract from June 1 was signed on September 5 with provision for extension for 90 days. This interim arrangement is to permit

resumption of shipments of tin ores to the United States, suspended since May 31. It was stated that the price of 112c. per lb. might be revised when the R.F.C. mission has completed its study of Bolivian tin costs and the effect of price changes on the level of production had been studied; the eventual price might or might not be more or less than the figure temporarily agreed. The price will presumably be subject to the reduction of 4c. for insurance and freight, and is stated to include smelting charges.

The Straits shipments of metal in August were 6,176 tons (4,776 in July). The destination of shipments was: Europe, 2,366 tons; U.K., 2,293 tons; British possessions, 1,184 tons; other countries 333 tons. Again there were no shipments to the United States. Imports of concentrates in August were 840 tons, of which 646 tons were from Thailand, 128 tons from Burma, 23 tons from Indo-China and 43 from various other countries. Total Malayan stocks at all points are computed as 7,678 tons at the end of July compared with 6,691 tons at the end of June. Indonesian output in August was 2,478 tons (2,295 in July).

The N.P.A. has stated that only 6,000 tons of metal will be available in the fourth quarter for the tinplate trade, and they have advised canmakers to explore the use of chemically treated black plate or chemically-treated materials for cans.

U.K. stocks at the end of July are reported as 2,052 tons with consumption 1,867 tons.

Zinc.—Though the I.U.M.M.S.W. strike was called off in the middle of last week, it is not expected that full operations will begin until the end of the current week. The loss of electrolytic zinc alone is expected to be in the neighbourhood of 10,000 s.tons for the fortnight's close-down. U.S. consumers are said to have purchased moderate quantities of Canadian special high-grade metal at the price of 21.25c. per lb. delivered, duty buyer's account. Consumption of zinc for galvanizing in the first five months of the year was about 11 per cent down on the figure for the corresponding period of 1950.

The American Zinc Institute reports the August production nearly 5,000 tons down at 74,035 s.tons against deliveries of 74,191 s.tons; despite the growing shortage and the call for the release of 25,000 tons from the stockpile, withdrawals on the Government account rose to 5,295 s.tons, the heaviest this year.

U.K. supplies at the end of July are reported as 34,506 tons compared with 34,221 tons a month earlier. Consumption in July was 22,605 tons, and for the first seven months of the year 165,412 tons (190,380 tons a year ago). The decline in consumption was principally in the galvanizing trade which used 36,618 tons as compared with 58,882 tons in the same period last year.

Aluminium.—U.S. production in July was 72,698 s.tons, the highest since May 1944, when the figure was 76,450 s.tons. Notwithstanding this, supplies for consumer goods have been cut to 46 per cent of the basic figure. The French output for the first half of the year was 8,400 tonnes besides 108,000 tonnes of bauxite and 22,500 tonnes of alumina calcines. The Austrian output in the first six months of the year was 12,758 tonnes (6,802 in the same period last year).

No reports have yet appeared as to what damage was done by the hurricane in Jamaica to the bauxite mining operations in the island.

Antimony.—A Reuter report from Manila states that a deposit of antimony has been discovered in Batangas province, about 50 miles south of Manila on the island of Luzon, Philippines, but its exploration and valuation is expected to take some time. Austria produced 6,710 tonnes of ore and concentrates in the first half of the year.

Cadmium.—U.K. imports of cadmium in July were 91,021 lb. as against 131,559 lb. in June. Imports have steadily risen in the last three years and are well ahead of the first seven months of last year at 848,710 lb.

Chromium.—U.K. imports of chromite in July were 15,096 tons (14,519 tons in June). Imports this year are now well ahead of the first seven months of 1950.

Quicksilver.—The U.S. Bureau of Mines' report on quicksilver on the second quarter of the year reflects the over-trading of earlier periods. Consumption was 24 per cent less than in the first quarter at 13,900 flasks, while imports were 37 per cent down at 8,065 flasks.

For the first six months of 1951 Spain supplied 8,340 flasks, Yugoslavia, 2,875; Italy, 3,365; Mexico, 2,234; Sweden, 680; Japan, 250; Switzerland, 104; Bolivia, 19; and Canada 13. Total stocks at the end of June were 27,688 flasks. Domestic output in the second quarter rose to 1,400 flasks.

Selenium.—The U.S. National Production Authority has issued a warning about the increasing scarcity of selenium, and stricter allocations are to be introduced. The government was said to be studying how to develop new sources of the metal. The chief producers are: in the United States: the A.S. & R. Co., the U.S. Metals Refining Co., and the International Smelting and Refining Co.; in Canada, the International Nickel Co. and Canadian Copper Refineries; in Australia, the Electrolytic Refining and Smelting Co.; in Sweden, the Boliden Mining Co. and in Belgium, the Société Générale Métallurgique of Hoboken.

Sulphur.—U.S. Bureau of Mines has confirmed the more reassuring news regarding prospects for sulphur production in the United States, noted in our columns recently. In addition to the Freeport Sulphur prospects on Garden Island Louisiana, the Bureau says that three other new sulphur sources are already being taken in hand, one already producing and the other two to be started within a year. There is also the increased production to come from petroleum refinery and natural gases, to which must be added recovery from smelter gases, pyrites and other materials, and finally production resulting from the expansion programme of foreign countries. The U.S. output in the first six months was 2,594,939 tons against 2,543,443 tons a year ago. In the U.K., the Sulphur Exploration Syndicate has been formed to carry out a survey of elemental sulphur deposits in foreign countries. The Syndicate will commence operations in Chile during the current month, with other parties to investigate later Sicily and Italy, the Middle East and Spanish America generally.

Tungsten.—U.K. prices appear to have stabilized under the operation of the control. There is no change to report in the general situation this week, and business remains on a small scale at 520s.-525s. c.i.f.

Gold.—Production in Ontario in the first half of 1951 was 1,239,675 f.o.z. (1,215,548 f.o.z. in the first half of 1950). Wage earners, however, were 12,630 in June as against 13,371 a year ago. The West Australian output in July was 48,970 f.o.z. Final figures for U.S. production last year have been revised down to 2,288,708 f.o.z. Colombian production in May was 38,988 f.o.z., which makes the output for the first five months 183,840 f.o.z. compared with 165,479 f.o.z. in the same period of 1950, a gain of 18,361 f.o.z. for the period. The Transvaal output in August was 989,027 f.o.z.

An extract from the Annual Report of the I.M.F., appearing elsewhere in this issue, deals with the growing absorption of gold production into non-monetary channels and the great fluctuations that have been witnessed in the premium gold market.

Platinum.—Current United States' reports to the effect that Defence demands for platinum generally exceed avail-

able supplies. The Advisory Committee for the platinum industry held discussions with the O.P.S. for ceiling price regulations, for all platinumiferous material. The ceiling price proposed would be raised to a level to attract domestic and foreign suppliers from hoarding, but to prohibit prices above the proposed ceiling. Despite the rising production from steadily increasing supply of Rustenberg platinum, the Committee could see no material increase in supply in the near future.

Silver.—It is reported from Bonn that West Germany is to receive silver from Mexico to mint 80,000,000 five-Mark coins.

The London Metal Market

(From Our Metal Exchange Correspondent)

Towards the end of last week it became known that the Bolivian Embassy in Washington and the Reconstruction Finance Corporation had confirmed that a contract for 30 days production of concentrates on the basis of a tin price of 112c. per lb. had been concluded.

In London the market since last Thursday has shown no special feature but the tendency has been generally downward whilst enquiry from the Continent remains very slow.

In the East the market has fluctuated in an irregular manner.

Stocks of tin in London Metal Exchange official warehouses at 1,128 tons show a fall of 50 tons for the week ended September 8.

On Thursday the official close on the tin market was: Settlement price £900, Cash Buyers £897 10s., Sellers £900; Three months' Buyers £855, Sellers £857 10s. In the afternoon the market was firm. Turnover for the day was 355 tons. Approximate turnover for the week was 755 tons.

The Eastern price on Thursday morning was equivalent to £887 5s. per ton, c.i.f. Europe.

Iron and Steel

As a direct consequence of the closing of the steel making plant at the Malleable Works, Stockton, last month, the Cargo Fleet Iron Co., Middlesbrough, has had to put the whole of their rolling mills on short time working. Compared with a normal 17 shifts per week the heavy mills will only work 12 shifts and the 11-inch merchant mill which has been working 12 shifts will come down to only five. This, of course, means a serious loss of earnings for the workers who have unanimously demanded a full inquiry by the Steel Corporation and an immediate rectification of the position.

To steel users it is an equally disappointing development since steel is already in short supply and this is normally a period of the year when outputs undergo substantial expansion. No less disturbing is the Treasury statement that during his visit to Washington, Mr. Gaitskell made application for an export allocation of 800,000 tons of American steel. This, if conceded, is bound to involve a heavy outlay of precious dollars, since American steel prices are substantially above British levels. It is, moreover, the clearest indication which has yet been forthcoming that British producers are not expected to be able to meet heavy home requirements without external assistance.

Certainly current demand far exceeds the supply. No doubt many consumers are endeavouring to purchase in excess of their immediate requirements in the hope of forestalling the new controls which are due to come into operation on December 3, but more or less effective checks are already imposed, deliveries apart from contracts are already in arrears and users apprehend further curtailments when the new allocations are issued for the four months beginning on December 3.

The scrap position is still very difficult. There has been

a slight improvement in deliveries here and there, but the practical results of the recent rise in prices, have yet to be revealed. Moreover, the acceleration of ore imports is offset by the scarcity of coke. Hence blast furnaces have not been able to substantially increase the output of pig iron and most grades are still in short supply.

Sheet makers and re-rollers of light sections and bars are constantly in need of billets, sheet bars and slabs are augmenting their stocks wherever possible by acquiring defectives, scraps and re-rolling scrap.

The Persian embargo will involve the stoppage of certain shipments of steel rails, but there is a heavy overseas demand for all classes of finished steel products principally from the Dominions and Colonies. There are also important bookings for Finland, Sweden and Denmark, but in other directions some limitation of steel exports is foreshadowed, as home requirements continue to expand.

Coal

Output for the second quarter of this year amounted to 53,184,852 tons. Costs were £127,979,331 and proceeds totalled £136,834,476, leaving a profit (before interest) of £8,855,145.

SEPTEMBER 13 PRICES

COPPER	
Electrolytic...	£227 0 0 d.d
TIN	
(See Metal Notes above for Thursday's Metal Exchange prices)	
LEAD	
Soft foreign, duty paid ...	£180 0 0 d.d
Soft empire, including secondary lead ...	£180 0 0 d.d
English lead ...	£181 10 0 d.d
ZINC	
G.O.B. spelter, foreign, duty paid ...	£190 0 0 d.d
G.O.B. spelter, domestic ...	£190 0 0 d.d
Electrolytic and refined zinc ...	£194 0 0 d.d
ANTIMONY	
English (99%) delivered, 10 cwt. and over ...	£390 per ton
Crude (70%) ...	£305 per ton
NICKEL	
99.5% (home trade)...	£454 per ton
OTHER METALS	
Aluminium, £124 per ton.	Platinum (scrap), £27.
Bismuth, 27s. 3d. lb.	Platinum, £27/£33 5s. nom.
Cadmium, 18s. 9d. lb.	Rhodium, £45 oz.
Chromium, 5s. 11d. lb.	Ruthenium, £30 oz.
Cobalt, 17s. 6d. lb.	Quicksilver, £73 10s./£74
Gold, 248s. f.o.z.	ex-warehouse.
Iridium, £65 oz. nom.	Selenium, 25s. nom. per lb.
Magnesium, 1s. 6d. - 2s. lb. according to quantity.	Silver (bar), 78½d. f.o.z. spot and forward.
Osmidium, £35 oz. nom.	Tellurium, 19s. lb.
Osmium, £70 oz. nom.	
Palladium, £8 10s. oz.	
ORES, ALLOYS, ETC.	
Bismuth ...	50% 16s. lb. c.i.f.
Chrome Ore—	40% 14s. 9d. lb. c.i.f.
Rhodesian Metallurgical (lumpy) ...	£13 per ton c.i.f.
" (concentrates) ...	£13 per ton c.i.f.
" Refractory ...	£12 12s. per ton c.i.f.
Baluchistan Metallurgical ...	£13 18s. 6d. per ton c.i.f.
Magnesite, ground calcined ...	£26 - £27 d.d
Magnesite, Raw ...	£10 - £11 d.d
Manganese, Best Indian	(Nominal)
Molybdenite (85% basis)	103s. 6d. per unit c.i.f.
Wolfram (65%), U.K.	520 525s. nom. c.i.f.
Tungsten Metal Powder	35s. nom. per lb. (home)
(for steel manufacture)	
Ferro-tungsten ...	33s. nom. per lb. (home)
Carbide, 4-cwt. lots ...	£30 3s. 9d. d.d per ton
Ferro-manganese, home	£39 17s. 1d. per ton
Ferro-manganese, export	8om.
Brass Wire ...	2s. 7½d. per lb. basis.
Brass Tubes, solid drawn	2s. 1d. per lb. basis.

Mining Men and Matters

Mr. W. N. Carnagham has joined the staff of Naraguta Tin Mines, Ltd., Jos, Northern Nigeria.

Mr. W. Marshall Clark has been appointed a director of Mufuli Copper Mines to fill the vacancy caused by the death of Mr. W. A. Odgers.

Mr. W. J. Dyack has resigned his position as mine manager of Kenya Consolidated Goldfields.

Major W. M. Henderson Scott has retired from the boards of Exploration Co., Star Explorations and El Oro Mining & Exploration. Mr. M. Woodbine-Parish has been elected chairman of El Oro Mining & Exploration in place of Major W. M. Henderson-Scott.

Mr. J. Hunter and Mr. C. D. Taylor have been elected directors of Roberts Victor Diamonds. Mr. W. H. Crichton has resigned from his position as director and has been appointed to the position of secretary of the company.

Mr. H. A. Mackay has been appointed a director of Lydenburg Gold Farms.

Major M. W. Parish has been elected chairman of Ashanti-Obuasi Reefs, in place of Major W. M. Henderson-Scott who has retired from the board.

Mr. O. D. Paterson has been appointed to the staff of the University of Queensland, as senior lecturer in mining.

Mr. H. Rissik has joined the board of Nchanga Consolidated Copper.

The American Mining Congress will hold their autumn meeting in Los Angeles, California on October 22-24 inclusive.

The Minister of Local Government and Planning, Mr. Hugh Dalton, has appointed Sir Henry Prior to be Ironstone adviser to the Ministry with effect from August 27.

Sir Henry Prior's new appointment follows from the passing into law of the Mineral Workings Act, 1951, which makes special financial arrangements for the restoration of land worked opencast for ironstone, including the restoration of land left derelict in the past.

Sir John Cass College, Jury Street, Aldgate, E.C.2 (Royal 3383) has arranged for a course of six lectures on "Quantum Theory of Metals," by Professor C. A. Coulson, commencing on Tuesday, October 30.

South-East London Technical College, Lewisham Way, London, S.E.4 (Tideaway 1421) has arranged for a 10-lecture course on the technology of diamond and other hard substances commencing Monday, October 8, with lectures every other Monday until February 18, 1952.

The Mining and Metallurgical Club Golfing Society will hold their Autumn Meeting at the North Middlesex Golf Club, Whetstone, N.20, on Wednesday, September 26.

Members who intend to be present are asked to advise the Secretary not later than September 19.

The British Metal Corporation Limited and Henry Gardner & Co. have announced that they have formed a company named The British Metal Corporation (Pakistan) Limited, with Registered Office at 7, West Wharf Road, Karachi, 2, Pakistan.

Business Items

Mr. H. Trencham, consulting engineer of British Thomson-Houston Co., Willesden, has retired after nearly 36 years of service with the company.

British Insulated Callender's Construction Co. has been awarded a contract for the erection of 928 miles of high and extra high tension transmission wires in Northern Queensland, according to Mr. Power, the Queensland Minister for Mines.

The Hunting Group of Companies have announced the opening of a new publicity office covering all the activities of the Hunting group of companies on the first floor of 35, Old Bond Street, London, W.1. Telephone: GROsvenor 7625. Mr. Y. Galitzine is the group publicity officer.

The English Electric Co. has received an order from the Ontario Hydro Commission for the fourth 66,000 kW. turbine generator for its steam plant at Windsor, Ontario. The first two units of the Windsor steam plant are expected to be in production late this year, the third early next year, and the new unit is scheduled for operation in the autumn of 1953.

Powell Duffryn have announced that as from August 21 last the address of the registered office of the company will be 19, Berkeley Street, London, W.1. Telephone Number: Grosvenor 3801.

The previous registered office at 40, Lime Street, London, E.C.3, will in future be the city office of the company but the transfer office of the company will continue at 17, Overton Road, Sutton, Surrey.

(By Our Stock Exchange Correspondent)

Australian, Rhodesian and West African gold producers were firmer. Companies in these countries would of course

Renewed interest was shown in tin shares following continued firmness in the metal prices. The announcement by the Treasury that the Chancellor has taken note of the special position of rubber companies with regard to dividend limitation, led to hopes that this might also be extended to Malayan tin shares and similar issues such as Beralts, and the leading issues again went cautiously ahead.

FINANCE	Price Sept. 12	+ or - on week	O.F.S.	Price Sept. 12	+ or - on week	MISCELLANEOUS GOLD (cont'd)	Price Sept. 12	+ or - on week	TIN (Nigerian and Miscellaneous)	Price Sept. 12	+ or - on week
African and European...	38		Alpha F.S.A.	11/9	-6d	G.F. Rhodesian	9/3	+3d	Amalgamated Tin	10/9	
Anglo American Corp...	21/10	-7 1/4d	Bilpinko P.S.	21/10	+7 1/4d	London & Rhodesian	5/9		Beralt Tin	23 1/4	+10 1/4d
Anglo French	11/10	-1 1/4d	Central Mining F.S.	4/10	-1 1/4d	London	2/10		British Tin Inv.	16/9	+4 1/4d
Anglo Transvaal Consol.	13/3	-4 1/4d	Freddies	12/4	-1 1/4d	Mysoe	6/3		Ex-Lands Nigeria	6/10	+1 1/4d
Camp Bird	43/9	-1 1/4d	Freddies N.	13/6	-3d	New Guinea	2/7	+3d	Gevor Tin	14 1/2	+1 1/4d
Central Mines S.A.	43/9	-1 1/4d	Freddies S.	13/6	-3d	Nundyroong	7/6	+3d	Gold & Base Metal	8 1/2	
Consolidated Goldfields	46/3	1/3	F.S. Geduld	3/4		Oreocum	3/3		Jantar Nigeria	7/1	-1 1/4d
Consol. Mines Selection	31/3	-7 1/4d	Geoffries	28/3	-2 1/2d	Oroville	14 1/4	+4 1/4d	Kosua Tin Area	11/	
East Rand Consols.	44 1/2	-	Harmon	24/6	-9d	St. John d'El Rei	42/6	+6d	Kromi	6/	
Emerald Mining	3/3	-	Leibenberg Estates	10/8	-6d	Zans	35/3	+10 1/4d	London Consol. Miners	16/	
H.E. Prop.	11/11	-1 1/4d	Middle Wits	25/9	-1 1/4d				Kaduna Syndicate	5/10	+7 1/4d
Henderson's Transvaal	11/11	-1 1/4d	Osits	46/3	+7 1/4d	DIAMONDS			London Tin	5/10 1/4	+7 1/4d
Kimberley	11/11	-1 1/4d	President Brand	46/3	+7 1/4d	Anglo American Inv.	4 1/2	+ 1/2	Ribon Valley	1 1/4	
Rand Mines	6/3	-	President Steyn	46/3	+7 1/4d	Cats	37/9				
Rand Selection	40/7	-7 1/4d	St. Helena	28/3	-2 1/4d	Cons. Diam. of S.W.A.	68/3	+1 1/2	SILVER, LEAD, ZINC		
Union Corporation	10/1	-	U.F.S.C. & G.	8/9	-3d	De Beers Deft. Bearer	16 1/2	+ 1/2	Broken Hill South	29/6	+1 1/2
Vereeniging Estates	5/8	-	Virginia Ord.	14/1	-	De Beers Deft. Bearer	16 1/2	+ 1/2	Burma Corporation	3/7 1/2	+3d
Wits	30/3	-3d	Welkom	30/3	-7 1/4d	COPPER			Consol. Zinc	25/6	+2/3
West Wits	44 1/4	+7 1/4d	Western Holdings	3 1/2		Chartered	71/3	+3d	Lab. George	25/6	+2/3
RAND GOLD			WEST AFRICAN GOLD			Indian Copper	61/3	+3d	Mining Trust	7/4 1/2	
Blyvoers	48/3	-6d	Ampangated Baset	2/1 1/4		Messina	7/4	+3d	Mount Isa	47/9	-6d
Brickpan	19 1/2	-3d	Ariston	7/1	-	Nehanza	7 1/2	+ 1/2	New Broken Hill	28/3	-1 1/2
Crown	2/2	-	Asbanti	28/6	-3d	Rhod. Anglo-American	6/16	+1/3	North Broken Hill	77/6	-4d
Consol. Main Reef	4 1/2	-	Bianchi	10 1/2	-1 1/4d	Rhodesian Selection	21 1/2	+1 1/2	Rhodesian Broken Hill	22/9	-4d
Dagdas	4 1/2	-	Brang	10 1/2	-1 1/4d	Rhokana	21 1/2	+1 1/2	San Francisco Mines	36/6	+2 1/4d
Dominion Reefs	19 1/2	-3d	G.C. Main Reef	8/1	-1 1/4d	Rio Tinto	21 1/2	+1 1/2	Treasure	4/	+1 1/4d
Doofoortens	27/3	-3d	G.C. Selection Trust	8/1	-1 1/4d	Rouge d'Or	12/3	+4 1/4d	MISCELLANEOUS		
Durban Deep	27/3	-3d	G.C. Selection Trust	8/1	-1 1/4d	Selection Trust	48 1/4	+3 1/4d	BASE METALS & COAL		
E. Dagdas	27/3	-3d	Kwahu	4/	-	Tanks	46/3	-9d	Amal. Collieries of S.A.	40/	-7 1/4d
E. Geduld	51/9	-3d	London & African Mng.	2/1	-3d	Tharsis Sulphur Br.	51/3		Associated Manganese...	72/	+2 1/2
E. Rand Props.	4 1/2	-	Lyndhurst Deep	1/3	-3d				China Iron Engineering	40/	-
Geduld	36/10 1/4	-7 1/4d	Maria	2/3	-1 1/4d	TIN (Eastern)			C.P. Manganese	46/9d	-1 1/2
Grootevlei	16/6	-3d	Nanwa	6/	-	Anglo-Burma	2/9		Natal Navigation	5/	
Libanon	21/9	-	Taqah & Aghos	7/	-	Ayer Hitam	27/9	+3d	Wankie	22 1/4	+6d
Lupatvlei	21/9	-	AUSTRALIAN GOLD			Batavia	31/	+3d	Witbank Colliery	4/	
Martinsburg	5/3	+6d	Boulder Perseverance	3 1/2	+1 1/4d	Gopeng	15/	+4 1/4d	CANADIAN MINES		
Moffatfontein B.	38/9	-	Gold Mines of Kalleredo	18/6	-	Hongkong	10/9		Dome	340	
Modderfontein East	38/9	-	Great Boulder Prop.	2/9	-	Kam			Hudson Bay Nickel	811 1/4	+3
New Kleinfontein	31/10	-	Great Western Consol.	2/9	-	Kepong Dredging	13/3	+1 1/4	International Mining	588	+4
New Pioneer	18/6	+3d	Great View and Star	21/3	-9d	Kinta Tin Mines	16/3	+1 1/2	Minne Copper of Canada	89/	+ 1/2
Randfontein	18/6	+3d	Mount Moran	18/3	-	Kramat Puh	17/		Noranda	3147	+ 1/2
Robinson Deep	14/	-	North Talguri	21/3	-9d	Kalaya Dredging	21/10 1/4	+7 1/4d	Queomont	£84	
Rose Deep	32/6	-	Parings	9/3	-	Pahang	14/6	-	OIL		
Simmer & Jack	28/9	-	Sons of Gwalia	8/3	-	Pengkalen	11/10	+3d	Anglo-Iranian	54 1/2	+ 1/2
Springs	9/3	-1 1/4d	South Kalguri	9/3	-	Petaling	14/	+4 1/4d	Anglo-Siam	46/10 1/4	+ 1/2
Sud Nibel	9/3	-	Western Mining	8/3	-	Rambutan	17/9	-	Attok	23 1/2	
Van Dyk	14/3	-6d	Wiluna	12/6	+1 1/4d	Southern China	21/7 1/2	+4 1/4d	Burmah	62/6	+7 1/4d
Ventersburg	28/9	-9d	MISCELLANEOUS GOLD			S. Malayan	29/6	-6d	Canadian Trade Bearer	14 1/2	
Vlakfontein	18/3	-3d	Cain and Motor	33/9	-	S. Tronoh	26/3	-3d	Mexican Eagle	27/9	+1/3
Vogelstruisbult	27/3	-	Chaparral Reef	33/9	-6d	Sungei Kinta	18/9	-	Shell	4 1/2	-
W. Rand Consolidated	41/3	-	Falcon Mines	10/7 1/2	-	T.P. D. Tin	9/3	-	Trinidad Leasehold	33/	-9d
Western Reefs	41/3	-7 1/4d	Globe & Phoenix	23/9	-	Tonoi Taiyong	29/6	+3d	Union Carbide	39 1/4	+1 1/4d

Company News & Views

Two Views on Dividend Limitation

Two announcements this week, one from the Treasury and the other from the boards of directors of Roan Antelope, Rhodesian Selection Trust and Mufulira Copper Mines brought good cheer to the stock markets.

From Downing Street came the pronouncement that the Treasury could not give rulings in individual cases in advance of legislation and that companies must reach their own decisions, "having regard on the one hand to their own circumstances and the announced intentions of the proposed measure." This is neither helpful nor news but it is indicative of the immense problems facing those whose task it is to clarify the White Paper proposals. A strong indication that the original proposals were inequitable may be inferred from the statement that the Chancellor has taken note of the case of rubber companies deriving their income from properties "overrun by the enemy," although the rider is added that no decision can be taken in advance of legislation. In the City this has been read as a hint that these companies might receive favourable consideration and *a fortiori* the tin mining companies similarly placed. The Downing Street statement did not, however, make mention of overseas mining companies. On the other hand, it was said that the Treasury would consider on their merits, applications where a "holding has recently been interposed whose standard is smaller than that of the company acquired and where a successful family or similar business, where profits for the most part had been ploughed back, has recently become a public company." This consideration may be of considerable importance to some of the recent new issues.

At about the same time as the Treasury announcement, a statement emerged from Masons Avenue informing shareholders that the boards of Roan Antelope Copper Mines, Rhodesian Selection Trust and the Mufulira Copper Mines have come to the conclusion that since no legislation governing dividend limitation has yet become law, they should proceed on the basis of declaring dividends in respect of the past year that would have been paid if there had been no suggestion of statutory dividend limitation.

They point out that hitherto the overseas mining industry has had special reasons for not regarding itself as coming within the scope of voluntary dividend limitation, and for the same reasons consider that it should be exempted from any statutory limitation. If, however, the proposals indicated in the White Paper do become law, and if it does apply to companies engaged in overseas mining operations, part of the dividends now declared, the directors state, will have to be treated as advances on account of the future years.

This appears to be an eminently sensible decision especially in view of the fact that the British Overseas Mining Association has already presented its case for claiming that overseas mining companies should not come within the ambit of the proposed law and that the distributions are in line with the present level of profits earned. Even more to the point is the possibility that the proposals may never become law.

Details of the dividends, declared as second interims, are given below.

Roan Antelope has announced that it will pay on October 15 a second interim dividend of 10d. per 5s. share, less tax, in respect of the year ended June 30, 1951. The new shares resulting from the recent scrip bonus of 80 per cent will participate in the dividend on the same basis as the old. This interim payment together with the 1s. interim paid in June last on the old capital makes the total distribution equivalent to 2s. 6d. per share on the pre-bonus share capital. The standard dividend on the increased capital is 7.9d. per share.

Rhodesian Selection Trust, which has a controlling interest in Mufulira Copper Mines, is paying on October 15 a second interim dividend of 1s. per share in respect of the year ended June 30, 1951. The new shares resulting from the recent 100 per cent scrip bonus will participate in the dividend. Together with the interim of 1s. 6d. per unit paid in June last on the old capital, this interim makes the total distribution equivalent to 3s. 6d. per share on the pre-capital bonus share. The standard dividend on the increased capital is 1s. 3d. per share.

Mufulira Copper Mines is to pay a second interim dividend of 4s. 3d. per share on October 15 in respect of the year ended June 30th. The new capital resulting from the recent scrip bonus of 66½ per cent will participate. The standard on the increased capital is about 5s. per share. The interim to be paid next month, together with the 5s. interim paid in May last, on the old capital, makes the total distribution equivalent to 12s. 1d. on the pre-bonus share capital.

Central Norseman Gold Corporation

Central Norseman Gold Corporation has now distributed to shareholders an aggregate sum of £A942,500 comprising 9s. 7½d. per share on the original issue of 1,600,000 shares; 3s. 7½d. per share on the second issue of 720,000 shares; and 3s. per share on the third issue of 280,000 shares.

In the financial year ended March 31, 1951, the Corporation treated 153,982 tons yielding 41,629 f.o.z. gold equivalent to 5.41 dwt. per ton. After providing £A96,205 for development redemption, and meeting all expenses, net profit was £A116,866.

Of the tonnage of ore treated, 110,872 tons were from the Phoenix mine, 28,856 from the Princess Royal, and 14,198 tons from the Lady Miller mine.

About 55 per cent of the Phoenix ore came from the new No. 4 ore body worked through the Regent shaft, and the remainder from the No. 3 ore body, in which stoping is nearly completed. The lower grade of the ore mined, compared with previous years, was due to the ore above the No. 25 level of the Regent shaft being lower in grade than had been expected, and to the higher grade blocks of ore not being accessible for mining at the time.

Development work completed during the period totalled 5,709 ft., an increase of 2,726 ft. over the previous year, the proportion of payable footage to total footage being 51 per cent for the Maraora reef and 60 per cent for the Princess Royal. A considerable amount of diamond drilling was done, 5,377 ft. of surface drilling, and 5,830 ft. of underground drilling, making a total footage of 11,177. Ore reserves were estimated at 126,000 tons with an assay value of 7.7 dwt., in the Phoenix mine; 165,000 tons assaying 7.2 dwt. in the Princess Royal mine, and 4,000 tons assaying 5.5 dwt. per ton in Lady Miller mine, making a total of 295,000 tons with an average assay value of 7.4 dwt. per ton. Average rate of milling was 11,841 tons per period of four weeks; recovery was 93.3 per cent, and assay value of residues was 0.39 dwt. per ton, which was 0.07 dwt. lower than in the previous year. Head value was 5.8 dwt. per ton. An option over the Mount mine at Widgiemooltha was abandoned, and 33 new leases, totalling 732 acres, were pegged at the Princess Royal.

Big Bell Has Good Year

Big Bell Mines Ltd., the lowest grade gold mine in Western Australia, has reported successful operations for the year 1950, and the result is very creditable, in view of the low grade of the ore, shortage of labour and rapidly rising costs. Profits for the year were £A.72,112. Operations were interrupted for two months by a dispute over contract rates. Total ore milled was 359,082 l.tons, from which was recovered 47,592 f.o.z. gold and 14,299 f.o.z. silver; head value of the ore treated was 313 dwt. gold per ton.

Company Shorts

Gold Mines of Australia Pegs Leases at Clunes.—Gold Mines of Australia has pegged leases at Clunes, the State's oldest goldfield. The objective is to cover extensions of the hitherto known ore-making structures.

New Kleinfontein Offer One-for-Six at 25s.—The directors of this company have announced that they have under consideration an offer to shareholders of one new share at 25s. per share for every six shares held. U.K. Treasury consent has been obtained and shareholders are to be advised of further particulars in due course.

Filani Pays 10 Per Cent.—A preliminary announcement of results for the year 1950 of the Filani (Nigeria) Tin Mining Co. shows that profit for the year, after all charges including taxation amounting to £8,768 (£2,186), was £5,567 against £1,482 out of which a final dividend of 5 per cent is proposed making 10 per cent for the year compared with 5 per cent previously.

High Values at Emperor.—Recent development by Emperor Gold Mining Co., Ltd., in the south-western part of the lease, above No. 7 level, has confirmed high values disclosed by churn drilling. Values met in rising have averaged 60-80 dwt. per ton over a width of 48 in. The formation carrying the values is a strong, flat-dipping lode heavily mineralized. No estimate of tonnage is yet possible. In the south end of the No. 8 level, development has located the downward continuation of the Loloma Main Lode and the Duchess Flat Lode. This result is important because it is the deepest operating level at which values have been disclosed in the Emperor Mine to date.

Good News for South Crofty.—Following a deputation headed by Messrs. N. K. Kitto, General Secretary of the Cornish Mining Development Association and D. Belcham, manager of South Crofty, to the Minister of Labour for the purpose of stressing the need for securing hard-rock miners rather than soft coal miners, it has now been announced that a hundred Italian miners will be allowed to assist in raising tin production at the South Crofty mine. This arrangement has been agreed to with the full cognizance and sanction of the Transport and General Workers' Union on the understanding that the foreign labour employed would be the first to be stood off should a shortage of work develop.

This is good news for South Crofty and for Mr. Rich, chairman of the company, who said at the last annual meeting that with an additional 100 "good miners" output could be doubled, development maintained and production costs reduced.

Rand Mine Returns for August

There was no decisive trend in the August returns of Rand gold mining companies. Of the 42 mines announcing outputs, 22 dealt with larger tonnages, 11 crushed less and 9 milled the same amount of ore as in the previous month. Profits of the majority of the mines—24—increased, while those of 18 were lower. Working costs showed a downward trend on 19 of the producers; they were higher on 17, while 6 mines worked at the same figure as in July.

New tonnage and profit records were announced by Blyvoor while costs were 7d. per ton lower. Of the other members of the Central Mining group, East Rand Props dealt with a lower tonnage, but the figure of costs, 33s. 11d., was the same. Crown Mines profit was slightly higher, notwithstanding a lower tonnage and increase of 4d. per ton in costs. City Deep dealt with a larger tonnage, but costs were 6d. up at 42s. 8d., and the profit was £2,780 lower. The milling by Modder East of an additional 9,000 tons resulted in lower costs and an increase of £2,160 in working profit. Durban Deep's profit was £10,500 below that of the previous month, resulting from lower tonnage and 2s. 5d. per ton increase in costs.

The profits of five mines belonging to the Anglo American Corporation showed an increase, while working costs were down with the majority. Brakpan was the only company to announce a lower profit, although costs were

1d. down at 36s. 8d., and the mine dealt with the same tonnage as in July. Western Reefs announced a record tonnage.

All the Union Corporation subsidiaries dealt with a larger tonnage excepting Grootvlei, which was the only mine to record a lower profit; that of all the others showed an increase. East Geduld's profit was £7,300 better.

The best showing in the Gold Fields group was made by Sub Nigel which stepped up tonnage by 3,500 tons, recorded a drop of 4d. per ton in costs and an increase of £3,600 in profit. Libanon dealt with the same tonnage as in the previous month, but costs rose by 2d. per ton and the profit was £1,100 down. The costs of both Simmer & Jack and Vlakfontein were slightly down and profits up. Robinson "Deep's" costs rose by 1s. 4d. per ton and profit dropped by £2,400.

West Rand's lower tonnage and increase of 2d. per ton in costs resulted in a drop of £8,900 in profit. The other mine under the control of General Mining, South Roodepoort, registered an increase of nearly £2,000 in profit.

Lower costs were the feature of all "Johnnies" mines with the exception of East Champ d'Or. Government Areas profit was £10,000 higher as likewise that of Randfontein, which latter dealt with more ore and announced a drop of 2d. per ton in costs. Rand Leases of the Anglo Transvaal group dealt with a larger tonnage, but profit was lower by £2,600.

The August returns for the Rand Mine produced are given below:

Blyvoor.—112,000 tons yielded 73,073 oz.; profit £666,972.
Brakpan.—120,000 tons yielded 22,486 oz.; profit £59,399.
City Deep.—167,000 tons yielded 33,503 oz.; profit £61,807.
Consol M.R.—197,000 tons yielded 26,652 oz.; profit £49,423.
Crown.—283,000 tons yielded 46,518 oz.; profit £85,898.
Daggafontein.—243,000 tons yielded 59,230 oz.; profit £440,993.
Durban Roodepoort.—174,000 tons yielded 31,008 oz.; profit £98,015.
East Champ D'or.—33,000 tons yielded £62,091; profit £11,123.
East Dagg.—100,000 tons yielded 18,207 oz.; profit £80,011.
East Geduld.—152,000 tons yielded 45,605 oz.; profit £373,210.
E. Rand Prop.—230,000 tons yielded 47,313 oz.; profit £198,476.
Geduld.—108,000 tons yielded 15,661 oz.; profit £43,678.
Govt. Areas.—224,000 tons yielded £395,749; profit £50,225.
Grootvlei.—196,000 tons yielded 43,504 oz.; profit £289,819.
Libanon.—87,000 tons yielded 16,101 oz.; profit £45,143.
Luipaards Vlei.—102,000 tons yielded 18,878 oz.; profit £58,874.
Marievale.—63,000 tons yielded 15,566 oz.; profit £76,575.
Modder "B."—55,000 tons yielded 6,345 oz.; profit £9,999.
Modder East.—130,000 tons yielded 15,083 oz.; profit £40,004.
New Kleinfontein.—109,000 tons yielded 14,288 oz.; profit £14,288.
New Modder.—22,000 tons yielded 2,662 oz.; profit £1,006.
New State.—65,000 tons yielded £98,292; profit £1,522.
Nigel.—37,000 tons yielded 4,928 oz.; profit £2,214.
Randfontein.—366,000 tons yielded £543,679; profit £50,043.
Rand Leases.—185,000 tons yielded £382,342; profit £86,058.
Rietfontein.—29,000 tons yielded 6,403 oz.; profit £32,306.
Robinson.—115,000 tons yielded 18,113 oz.; profit £7,680.
Rose Deep.—84,000 tons yielded 12,177 oz.; profit £20,441.
Simmer & Jack.—134,000 tons yielded 21,108 oz.; profit £34,848.
S.A. Lands.—118,000 tons yielded 20,679 oz.; profit £81,919.
South Roodepoort.—28,500 tons yielded 6,292 oz.; profit £24,406.
Springs.—169,000 tons yielded 21,895 oz.; profit £31,196.
Sub Nigel.—69,000 tons yielded 24,323 oz.; profit £138,604.
Van Dyk.—103,000 tons yielded 15,518 oz.; profit £15,567.
Venterspost.—105,000 tons yielded 22,365 oz.; profit £72,317.
Vlakfontein.—39,000 tons yielded 14,509 oz.; profit £85,721.
Vogelstruisbult.—83,000 tons yielded 20,857 oz.; profit £84,660.
Welgedacht.—35,000 tons yielded 4,098 oz.; profit £4,108.
West Rand Cons.—216,000 tons yielded 34,174 oz.; profit £164,119.
Western Reefs.—108,000 tons yielded 23,313 oz.; profit of £116,249.
Wit. Gold.—60,000 tons yielded £85,256; profit £2,629.
Wit. Nigel.—10,000 tons yielded £32,119; profit £545.

INDIAN COPPER CORPORATION

The Twenty seventh Annual General Meeting of the Indian Copper Corporation, Ltd., was held at the Chartered Insurance Institute, 20, Aldermanbury, London, E.C.2, on Wednesday last.

Sir Godfrey B. H. Fell, K.C.I.E., C.S.I., O.B.E., Chairman and Managing Director, presided.

The following is the statement by the Chairman circulated with the report and accounts for the year ended December 31, last:

The Balance Sheet calls for little comment, £95,651 written off mining development and general expenditure finally extinguishes that item in the Balance Sheet. Sundry debtors and payments in advance, under current assets, show an increase of over £53,000, owing to large sums being due at the close of the year on account of sales of the Corporation's products.

The Profit and Loss Account shows that net proceeds of sales and adjustment of stocks on hand were higher by £21,455, while working costs rose by £39,867.

Shareholders will be interested to note that profit on sales of kyanite ore again increased—by £59,445 to £90,516. Sillimanite of high quality is produced from the Corporation's kyanite ore and is used largely by the refractory industry all over the world. Sales of kyanite ore last year reached the record total, since the inception of this business 25 years ago, of 23,717 tons. The price also rose rapidly during the year and the demand for Indian kyanite is still increasing, so that it is reasonable to expect prices to remain at their present high level for some time to come. Mr. N. Lal, your Kyanite Superintendent in India, is to be congratulated on the excellent results achieved. As the Government of India have recently curtailed the export of kyanite, the profits from this source are likely to be much lower in the current year.

The Corporation's gross profit for the year was £612,682. This is £19,130 more than in 1949.

Taxation on the profit for the year at £347,000 is £4,000 higher.

After again allowing £85,000 for depreciation of buildings, machinery, etc., transferring £30,000 to general reserve, writing off £95,651 for mining development and general expenditure, and providing £59,294 for the proposed dividend of 12½ per cent, less income tax at 9s. 6d. in the £, the carry forward will be £40,103, as against £37,566 brought in.

I think you will agree that the financial results for the year under review may be regarded as satisfactory.

COPPER LEASES—OPERATING RESULTS

A detailed review of the year's operations is given in your General Manager's report, which can be seen during office hours at the Company's registered office. The main items are also briefly summarized in the Director's report. 386,156 s.tons of ore were treated in the mill. This is the highest since 1941, when 397,390 s.tons were treated. The production of refined copper increased by 224 t.tons.

On the other hand, the output of rolled metal was lower by 1,863 t.tons, due mainly to the introduction of cold rolling, which was still subject to teething troubles in the new 4-high cold rolling mill, and in part to the fabrication of sheet of a lighter average gauge.

Although the total footage driven was 229 ft. less than in 1949, the payability increased by 5.4 per cent to 63.5 per cent, the highest since 1945, owing to development in more favourable ground.

ORE RESERVES

The increase of 288,765 s.tons, bringing the total of the estimated ore reserves to the record figure of 3,087,195 s.tons, is most gratifying. Mosaboni mine accounted for slightly over four-fifths of the development footage driven, and Badia mine slightly under one-fifth. Of the pay footage, Mosaboni was responsible for 82.4 per cent, averaging 2.96 per cent copper across 5.5 ft., and Badia 17.4 per cent, averaging 2.4 per cent over 5.4 ft. Dhobani, nearing its end, contributed 0.2 per cent, of lower value and width.

The continued high proportion of payable footage in Mosaboni is mainly due to the good results on the 16th level (the North Badia ore shoot) which so far shows a payable strike length of 1,630 ft., averaging 3.1 per cent across 6.6 ft., compared to 1,600 ft. averaging 3.04 per cent across 5.9 ft. on the 14th level.

In the Badia Mine, development was mainly concentrated on the locating and opening up of the downward continuation of the 1,750-2,050 ore shoot from the 7th level. This has now been developed on the 8th level, where 195 ft. average 2.73 per cent across 6.7 ft., and on the 9th level over a strike length of 220 ft. averaging 2.56 per cent across 5.25 ft.

The General Manager points out, however, that development results during the current year are unlikely to be so favourable, owing to the necessity for driving through what will probably prove to be barren ground between several of the ore bodies.

SALES

The average price received by the Corporation for sales of hot rolled brass in 1950 was £180.45 per ton, and for cold rolled brass £217.5 per ton.

Owing to the scarcity of zinc and the consequent high price, it has been recently decided to substitute, as far as possible, the rolling of copper sheet for the rolling of brass sheet, thus conserving our stocks of zinc. The Indian Government have placed an order with us for refined copper ingots, of which we are endeavouring to supply 200 tons a month from September to December, 1951. The year's sales included 1,071 tons of refined copper ingots at the average price of £179.03 per ton. There were no sales of copper in the previous year.

Labour conditions throughout the year were generally good, and continue to remain satisfactory.

The large and ambitious Damodar Valley Corporation power scheme is expected to be in operation early in 1954 and the high tension line will pass through Ghatsila.

CURRENT RESULTS

During the five months, ended May 31, 1951, the mill treated 141,880 t.tons of ore, compared with 138,554 t.tons for the corresponding five months of 1950. The production of refined copper amounted to 2,776 t.tons, against 2,593 t.tons for the first five months of 1950. The output of products was 3,178 t.tons compared with 3,039 t.tons. The production of rolled copper sheet amounted to 489 t.tons and rolled copper circles to 213 t.tons.

My colleague, Mr. Preston, visited India in February last and spent several days inspecting your property and discussing current problems with your General Manager and with Gillanders Arbutnot & Co., your Local Agents and Registrars in Calcutta. He was most favourably impressed with conditions generally, both at the mine and at the mill. We are much indebted to him for undertaking this mission, and are confident that his visit to the property not only enabled several outstanding questions to be promptly settled, but also was a source of encouragement to your staff, who much appreciated the keen interest he displayed in everything affecting the efficiency of the operations and the comfort and welfare of the staff and employees.

SULPHUR

The possibility of recovering sulphur products from the roaster and smelter gases at Moabhandar was the subject of prolonged consideration prior to the outbreak of the war in 1939. After careful study of the problem, your Directors came to the conclusion that the project was, at that time, uneconomic. Owing, however, to the present world shortage and the high price of sulphur, the problem, which is now of considerable importance, is being reconsidered, and an eminent expert is now visiting the property to report and advise on the project.

Many of the staff, both European and Indian, with long and valued service to their credit, retired during the year. I wish to place on record our appreciation of the willing co-operation of our staff and employees, past and present, throughout the year. Your General Manager, Mr. E. R. Dempster, has again earned our gratitude for his efficient discharge of his duties. He was absent, on leave in this country, for part of the year, during which time your Mine Manager, Mr. N. A. B. Hill, acted for him with marked ability. Special mention should also be made of your Works Manager, Mr. J. G. Berry, and the Power House staff for the remarkable achievement in maintaining, and indeed increasing, the power generated, in spite of the 4,000 kW. turbo alternator being out of action for three-fourths of the year. I should like to pay a tribute also to the zeal and efficiency with which the Corporation's able Secretary, Mr. Shelley, performs his duties.

Dr. C. B. Jones, who succeeded Dr. W. Hutchison as Chief Medical Officer early in 1950, has carried out his duties with conspicuous energy and ability.

LOCAL AGENTS AND REGISTRARS

Finally, I should like to express our thanks for the valuable assistance and co-operation we have received during the year from Messrs. Gillanders Arbutnot & Co., Ltd., our Local Agents and Registrars.

The Report and Accounts were unanimously adopted. The retiring Directors, Mr. D. S. Warren and the Hon. R. M. Preston, D.S.O., were re-elected and the Auditors, Messrs. Turquand, Youngs & Co., were re-appointed.

WESTERN MINING CORPORATION LIMITED

EXPANSION OF ACTIVITIES

The Annual General Meeting of Western Mining Corporation Limited was held on September 6 in Melbourne.

Sir Walter Massy-Greene (the Chairman), in the course of his speech said: The profit for the year was £A.101,611.

The appropriation account balance brought forward at April 1, 1950, was £A.455,544, which, adding the net profit for the year of £A.101,611, gives a total of £A.557,155. After deduction of dividend No. 8 of 6d. per unit, £A.69,859, there is a balance to carry forward of £A.487,296.

The affairs of the companies in which Western Mining Corporation has substantial interests have recently been reviewed at the annual meeting of those companies. Developments, though varying from mine to mine, have, in general, been very satisfactory. The only serious difficulty which is common to all gold mines is the effect of the steadily rising costs, which has already consumed a substantial portion of the benefits resulting from the currency devaluation in September, 1949.

Over the last few years the Corporation has been dependent for its profits on dividends from Central Norseman Gold Corporation, N.L. and Gold Mines of Kalgoorlie Ltd. and occasional profits on the sale of properties. The two dredges of Central Victoria Dredging Co. N.L. have now been brought into commission and it is expected that dividends from this Company will be received during the current year. New Coolgardie Gold Mines, N.L. has nearly finished its construction programme and we may look forward to the gradual repayment of this Company's debt. At Great Western Consolidated N.L., it appears that the mine will come into production in the latter part of next year.

The expansion of the activities of the various companies of the group has resulted in revenue of the operating companies being diverted to various capital purposes to a larger degree than normal. These capital programmes are approaching completion, except at Great Western Consolidated, N.L., which is financing its construction programme from its own share issue.

Apart from the various capital expenditures on plant, etc., the circumstances of the last few years of steadily rising costs and uncertain dates of delivery have led to an increased lock-up of capital by the various companies in stores. Taking into account these factors and the expected results of the various operating companies it is anticipated that the Corporation's revenue in future will increase. The intention of the directors is to devote the greater part of its income to the payment of dividends. At the same time it must be recognised that all mines are wasting assets and a mining finance company must, therefore, from time to time, find new mines to replace assets being depleted, if only to maintain its business.

The Report was adopted.

GEEVOR TIN MINES

The Thirty-Eighth Annual General Meeting of Geevor Tin Mines, Ltd., was held on September 12 in London.

Mr. G. W. Simms (the Chairman) presided, and the following is an extract from his statement for the year ended March 31, 1951:

Members have before them the accounts covering a period of unusually high tin price and profit. Out of a profit of £246,900 no less than £147,250 is absorbed by income tax and profits tax, while stockholders receive a net amount of £27,500, the balance being required to replace old plant and machinery.

However satisfactory the results of mine operations may be, the position at Geevor as regards mine development always calls for unremitting care and attention and is never free from anxiety. With our narrow lodes development footage must be maintained at a high rate in relation to the tonnage extracted, consequently the need for discovering new lodes and extending lateral development as rapidly as possible is ever pressing.

Our No. 3 branch lode has become impoverished, but this was not unexpected, and arrangements have been made with the Crown under which our levels on this lode can be advanced further to the west into the old Levant undersea sett. If No. 3 branch lode maintains its present strike it should enter the undersea sett well to the north of the main workings of the old Levant mine, and it is not the intention of your directors to embark upon the undertaking of unwatering that mine at least until such time as development results justify such a course.

Over the 40 years of the company's existence, including the financial year under review, Geevor shareholders have received a gross annual dividend averaging, approximately, 4.5 per cent on the actual amount of capital which they have subscribed, and excluding money otherwise invested in the business.

For such a high risk industry that rate of interest cannot be considered as anything but a meagre return.

The above remarks will, I hope, convey to you the difficulties which confront this company under the existing system of mine taxation. I hope also that they may draw attention to the impossibility of resuscitating the Cornish tin mining industry unless such penal taxation be removed.

The Report and Accounts were adopted.

DIVIDENDS

African Land and Investment 17½%
Boulder Perseverance Ord. 5% (Oct. 3)
British Ropes 3% i
Bechuanaland Exploration 4%
Central Provinces Manganese Ore ls. i * (Oct. 1)
Chartered Bank of India 7% i
English Electric 5% i
Filani (Nigeria) Tin 5% *
Geevor Tin Mines ls. 9d.
Gopeng Consolidated 15% i (Sept. 14)
International Nickel Co. of Canada 50c. (Sept. 20)
Kepong Dredging 6d. i (Oct. 3)
Mount Morgan ls. i (Sept. 29)
Mufulira Copper 4s. 3d. i
Pengkalan 15% i (Sept. 28)
Powell Duffryn 5%
Rhodesian Selection Trust ls.
Roan Antelope 10d. i (Oct. 15)
South Crofty 5% i
i interim

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Applications giving full particulars of age, experience, qualifications and the names of one or more persons to whom reference may be made should reach the Registrar, University of Sydney, Sydney, Australia, from whom further information may be obtained, not later than **10th November, 1951**. Candidates are requested to forward a copy of the application to the Secretary, Association of Universities of the British Commonwealth, 5, Gordon Square, London, W.C.1.

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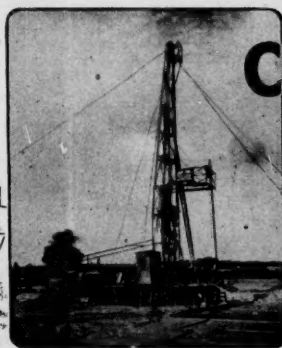


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